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Three-dimensional finite element model of a high power, low frequency ring-shell flextensional sonar transducer

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Three-Dimensional Finite Element Model of a High Power,
Low Frequency Ring-Shell Flextensional Sonar Transducer

by
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A three-dimensional finite element model of a high power, low frequency ring-shell flextensional transducer (Sparton of Canada, Ltd., Model F34A0610) was developed for use with the ATILA code. This transducer model is to be coupled with an analytical acoustic field description in order to model a dense sonar array of US Navy interest. The three-dimensional model was derived from a two-dimensional model provided by the Naval Undersea Warfare Center. Two types of finite-element analyses were performed using ATILA: (1) an in-air modal analysis, in which the eigenfrequencies and eigenmodes are computed, and (2) an in-water harmonic analysis, in which the pressure field at a desired frequency is computed. The frequency of the ring mode computed for the three-dimensional model in the modal analysis was found to be 5 percent higher than the corresponding value for the two-dimensional model. From the harmonic analyses, the maximum sound pressure level on the acoustic axis was found to be 4 dB higher than the manufacturer's measured value and is located at exactly the same frequency.

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ABSTRACT

A three-dimensional finite element model of a high power, low frequency ring-shell flextensional transducer (Sparton of Canada, Ltd. Model 34A0610 [Ref. 1]) was developed for use with the ATILA code [Ref. 2]. This transducer model is to be coupled with an analytical acoustic field description in order to model a dense sonar array of US Navy interest [Ref. 3].

The three-dimensional model was derived from a two-dimensional model provided by the Naval Undersea Warfare Center [Ref. 4]. Two types of finite-element analyses were performed using ATILA:(1) an in-air modal analysis, in which the eigenfrequencies and eigenmodes are computed, and (2) an in-water harmonic analysis, in which the pressure field at a desired driving frequency is computed. The frequency of the ring mode computed for the three-dimensional model in the modal analysis was found to be 5 percent higher than the corresponding value for the two-dimensional model. From the harmonic analyses, the maximum sound pressure level on the acoustic axis was found to be 4 dB higher than the manufacturer's measured value and is located at exactly the same frequency.

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ACKNOWLEGMENTS

I. INTRODUCTION

The direction of active sonar surveillance systems is toward lower frequencies, requiring arrays of large, high power tranducers. The successful design and operation of such arrays requires the ability to predict reliably their performance.

To this end, Professor S. R. Baker of the Physics Department, and Professors D. R. Canright and C. L. Scandrett from the Mathematics Department of the Naval Postgraduate School have established a research program with the goal of developing the means to predict the performance of arbitrarily dense, volumetric active sonar arrays [Ref. 3]. The approach used is based on the T-matrix method, which has been successfully applied to solve multiple scattering problems [Ref. 5]. In the present application, the acoustic field external to an arbitrary collection of radiators (here a radiator is a transducer surrounded by fluid to some arbitrary radius) is represented as a superposition of free-space radiation eigenfunctions (spherical harmonics). For each individual radiator a transition matrix, or T-matrix, is computed, which relates the expansion coefficients of outgoing waves to those of incoming waves and the driving

voltage. This requires the results of two harmonic finite element analyses, the free-field radiation problem and the single element scattering problem. Ultimately, the T-matrix of the total configuration, relating the far-field pressure to the driving voltage applied to each element, is obtained in terms of the T-matrix of the individual elements and translation matrices (of the spherical functions) that depend on the distance between and relative orientation of pairs of elements.

This thesis is concerned with the application of the finite-element code "ATILA", developed at the Institut Superieur d'Electronique du Nord (Lille, France) [Ref. 2] to provide a three-dimensional model of a low frequency flextensional transducer of US Navy interest, the Model 34A0610 "ring-shell" transducer, manufactured by Sparton of Canada, Ltd. [Ref. 1], illustrated in Fig. 1. This transducer was used for proof of principle tests of the so-called "billboard" array concept, which is ilustrated in Fig. 2. The results of harmonic radiation and scattering analyses performed using ATILA with the three-dimensional model will be used to generate the single-element T-matrix for this transducer, and so enable the billboard array to be modeled using the modified T-matrix method. The solution of the radiation problem is described in this thesis. The solution of the scattering problem can not be performed at this time. It will be performed using the same three-dimensional model as

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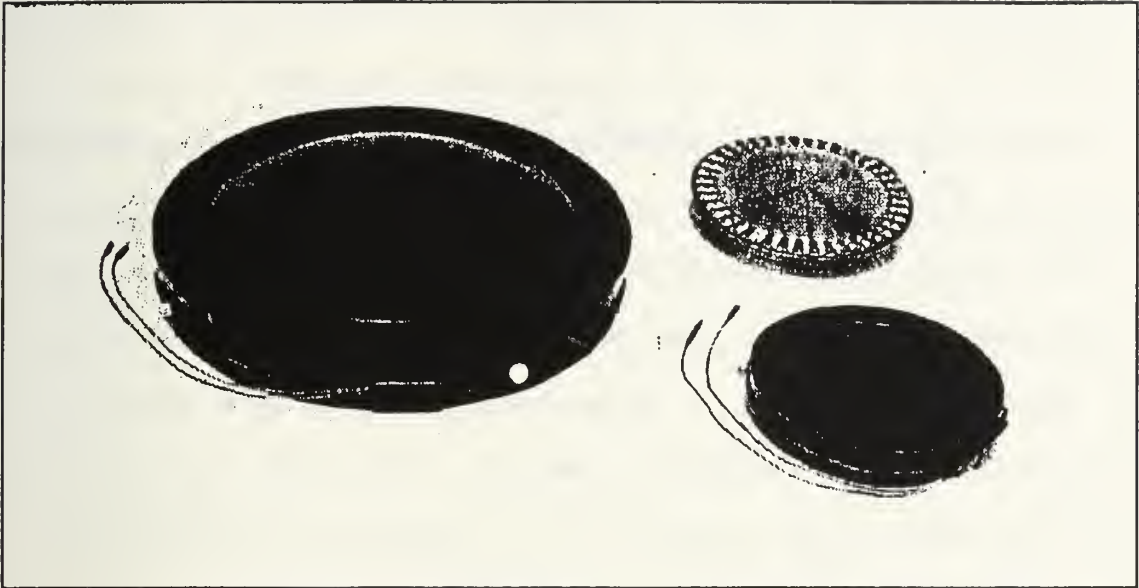
Figure 1   Sparton Flextensional Transducers. From Ref. 1.
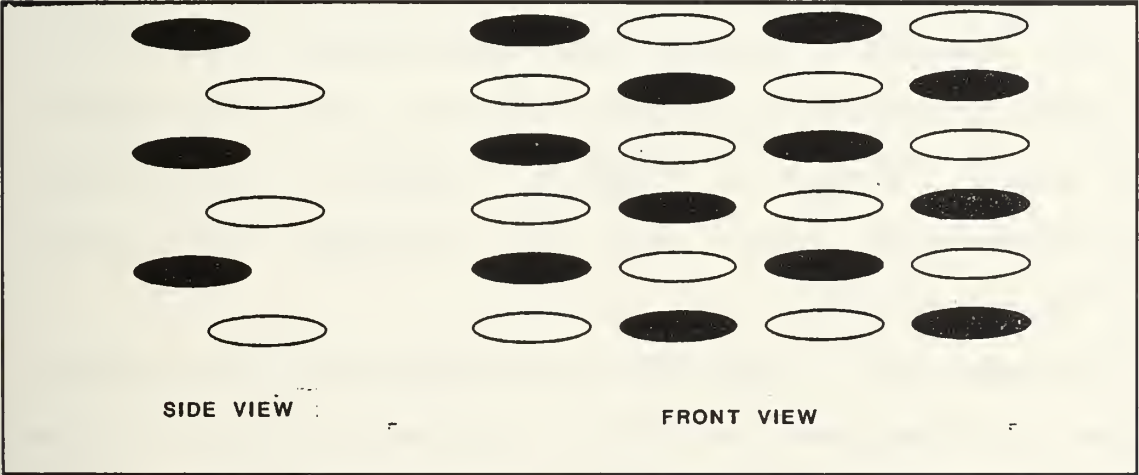

Figure 2   "Billboard" Array Concept.

for the radiation problem as soon this capability is available in ATILA.

A two-dimensional (axisymmetric) model of the ring-shell transducer was developed by the Naval Undersea Warfare Center [Ref. 4]. This model contains 285 elements, 825 nodes, and 1026 degrees-of-freedom. However, an axisymmetric model is not sufficient for modeling a dense array, since all modes of vibration (symmetric and anti-symmetric) can be excited by the incoming pressure field generated by neighboring transducers. A three-dimensional model is necessary.

A three-dimensional model is considerably more complex and requires far more computational time and computer memory. There is, however, a limit of 3000 degrees-of-freedom imposed by our version of the ATILA code. This limitation means that it is not feasible to obtain a three-dimensional model of the ring-shell transducer by a simple rotation of the axisymmetric model about its axis of symmetry. Instead, a simplifield three-dimensional model with an acceptable engineering accuracy was pursued.

The remainder of this thesis is divided into six chapters. Chapter II describes the theory involved with the finite element analysis of piezoelectric transducers. Chapter III describes the transducer in question. Chapter IV discusses finite element model design considerations and the characteristics of the three-dimensional model. Chapter V presents and discusses the results of in-air modal analyses

and in-water harmonic analyses. Chapter VI presents the conclusions. Appendix A contains a copy of the input data file for the most refined mesh used in the harmonic analyses.

II. THEORY

A. FINITE ELEMENT ANALYSIS, THE ATILA CODE

The application of finite element analysis (FEA) to solve boundary value problems consists of the transformation of the governing differential or integral equation(s) into a multi-nodal matrix equation, the solution of which represents the discretized solution of the problem. There are many techniques to obtain a finite element formulation [Refs. 6,7,8,9].

ATILA is a finite element code developed at Institut Superieur d'Electronique du Nord (ISEN) in France for the analysis of underwater transducers. It utilizes the variational formulation of the finite element problem [Refs. 10,11,12,13,14].

ATILA uses quadratic isoparametric elements. Isoparametric means the same polynomial (quadratic) is used to interpolate both geometry and field variation.

ATILA has 46 different types of elements. There are shell, plate, transition, spring, trilaminar, and two- and three-dimensional isoparametric elements of various geometries. It is possible to model elastic, piezoelectric, magnetostrictive, magnetic and composite materials, fluids, solid-fluid interfaces, and radiation dampers.

ATILA can perform: (1) static analyses, (2) modal analyses, which correspond to a free vibration problem, where the eigenfrequencies and eigenmodes are computed, and (3) harmonic analyses of radiation or scattering problems, which correspond to a forced vibration problem, the excitation being the voltage applied across the electrical terminals of the transducer or external forces applied to the nodes.

B. HARMONIC ANALYSIS OF A RADIATING PIEZOELECTRIC TRANSDUCER

This problem is governed by the equations of motion in the elastic and piezoelectric structures, by Poisson's Equation in the piezoelectric structures, and by Helmholtz's Equation in the fluid. Appropriate boundary conditions are defined, both on the solid-fluid interface and over the external fluid boundary, which must simulate the appropriate radiation condition.

The solid equation of motion is given by [Refs. 13,18,19]:

$$\rho \frac{\partial^2 u_i}{\partial t^2} = \frac{\partial \sigma_{ij}}{\partial x_j}$$

(1)

where ρ is the solid material density, u is the displacement vector, t is time, $[\sigma]$ is the stress tensor, and x_j is a coordinate direction. Here i and j can be 1, 2 and 3, and the Einstein notation is used, where summation is implied over repeated indices in the same term.

Poisson's Equation is given by [Refs. 13,18,19]:

$$\frac{\partial D_i}{\partial x_i} = 0 \qquad (2)$$

where D is the electric displacement vector and x_i is a coordinate direction; i can be 1, 2 and 3.

The linearized,lossless Helmholtz Equation for the propagation of sound in fluids is given by [Ref. 15]:

$$\nabla^2 p - \frac{1}{c^2} \frac{\partial^2 p}{\partial t^2} = 0 \qquad (3)$$

where ∇^2 is the three-dimensional Laplacian operator, p is the acoustic pressure, and t is time.

In piezoelectric materials the stress tensor and the electric displacement vector can be related to the strain tensor and the electric field vector and its material properties using the following constitutive equations, which neglect magnetic and pyroelectric effects [Refs. 13,18,19]:

$$\sigma_{ij} = c^E_{ijkl} S_{kl} - e_{kij} E_k \qquad (4)$$

$$D_i = e_{ikl} S_{kl} + \epsilon^S_{ij} E_j \qquad (5)$$

where $[\sigma]$ is the stress tensor, $[S]$ is the strain tensor, E is the electric field vector, D is the electric displacement

vector, $[c^E]$ is the constant electric field elastic stiffness tensor, $[e]$ is the piezoelectric tensor, and $[\epsilon^S]$ is the constant strain dielectric tensor; i, j, k and l can be equal to 1, 2 and 3.

Ultimately the solution is desired in terms of displacements and electric potentials. To this end the following two equations from elasticity and electricity, respectively, are used [Refs. 13,18,19]:

$$S_{ij} = \frac{1}{2} \left(\frac{\partial u_i}{\partial x_j} + \frac{\partial u_j}{\partial x_i} \right) \tag{6}$$

$$E_i = -\frac{\partial \Phi}{\partial x_i} \tag{7}$$

where $[S]$ is the strain tensor, u is the displacement vector, x_i is a coordinate direction, E is the electric field vector and Φ is the electrical potential; i and j can be equal to 1, 2 and 3.

The boundary conditions and prescribed excitations at each node can be defined either by a displacement or an applied force, an electrical potential or an electrical charge, or an acoustic pressure.

In ATILA, the previous seven equations are transformed into the following matrix equation [Refs. 2,11,12,14]:

$$
\begin{vmatrix}
[K_{uu}] - \omega^2 [M] & [K_{u\Phi}] & -[L] \\
[K_{u\Phi}]^T & [K_{\Phi\Phi}] & [0] \\
-\rho^2 c^2 \omega^2 [L]^T & [0]^T & [H] - \omega^2 [M_1]
\end{vmatrix}
\begin{Vmatrix} U \\ \Phi \\ P \end{Vmatrix}
=
\begin{Vmatrix} F \\ -q \\ \rho c^2 \Psi \end{Vmatrix}
\tag{8}
$$

where the variables are defined as:

U: vector of the nodal values of the components of the displacement field,

Φ: vector of the nodal values of the electrial potential,

P: vector of the nodal values of the pressure field,

F: vector of the nodal values of the components of the externally applied forces,

q: vector of the nodal values of the externally applied electrial charges,

Ψ: vector of the nodal values of the integrated normal derivative of the externally applied pressure field (proportional to the externally applied flux),

$[K_{uu}]$:   stiffness matrix,

$[K_{u\Phi}]$:   pieozoelectric matrix,

$[K_{\Phi\Phi}]$:   dielectric matrix,

$[M]$:   consistent mass matrix,

$[H]$:   fluid (pseudo-) stiffness matrix,

$[M_l]$:   consistent fluid (pseudo-) mass matrix,

$[L]$:   coupling matrix at the fluid structure interface,

$[0]$:   zero matrix,

ω: angular frequency,

ρ: fluid density,

c: fluid sound speed,

and the superscript T represents the matrix transpose.

The results of this analysis for each input frequency are the complex displacement, rotation, and electrical potential fields at each transducer node, the complex pressure field at each fluid node, and the complex electrical impedance and admittance.

C.   MODAL ANALYSIS OF A PIEZOELECTRIC TRANSDUCER

This problem is governed by the equations of motion in the elastic and piezoelectric structures, and by Poisson's Equation in the piezoelectric structures. The matrix equation governing this problem is easily obtained from that described in the previous section. In a modal analysis there is no fluid and there are no external forces applied (the natural boundary conditions), so the third row and column of Eq. (8) become irrelevant, and F is replaced by 0, resulting in

$$\begin{vmatrix} [K_{uu}] - \omega^2 [M] & [K_{u\Phi}] \\ [K_{u\Phi}]^T & [K_{\Phi\Phi}] \end{vmatrix} \begin{vmatrix} U \\ \Phi \end{vmatrix} = \begin{vmatrix} 0 \\ -q \end{vmatrix} \qquad (9)$$

where the elements are as defined in Eq. (8).

In this equation the resonance condition, which corresponds to the electrical short-circuit condition, is obtained by setting $\Phi=0$. The anti-resonance condition, which corresponds to the electrical open-circuit condition, is obtained by setting $q=0$.

The results of this analysis are the eigenfrequencies and eigenmodes. The maximum number of modes, which must be specified by the user, is 100.

III. TRANSDUCER DESCRIPTION

The transducer modeled in this research project is the Model 34A0610 manufactured by Sparton of Canada, Ltd. [Ref. 1]. It is a depth-compensated, high power, low frequency type V flextensional transducer (so-called "ring-shell"). A cutaway view is shown in Fig. 3 [Ref. 1]. The motor element consists of a set of 144 plates of thickness-poled lead zirconate titanate ceramic of dimensions 8x8x1 cm separated by 72 steel wedges, arranged in a 0.8 m diameter ring [Ref. 4]. The ceramic plates are connected electrically in parallel and effectively poled tangentially. One ST 4340 steel thin shell (a spherical section) is fastened to each ring planar surface. The ring is wrapped on the outside by a fiberglass belt, which provides a compressive stress of 25-40 MPa [Ref. 4].

The main operational characteristics of the transducer are [Ref. 1]:

a. Resonance Frequency, which corresponds to the maximum voltage response in water - 610 Hz;

b. Source Pressure Level, which corresponds to the effective pressure on the acoustic axis, at resonance - 213 dB re 1μPa at 1 meter (driven by 3000 volts rms);

c. Efficiency, which is the ratio of the output acoustic power to the input electric power - 90 percent at resonance, 65 percent at the -6dB points;

d. Operational Depth, which corresponds to the maximum depth where the performance of the transducer is not compromised - exceeds 400 m.
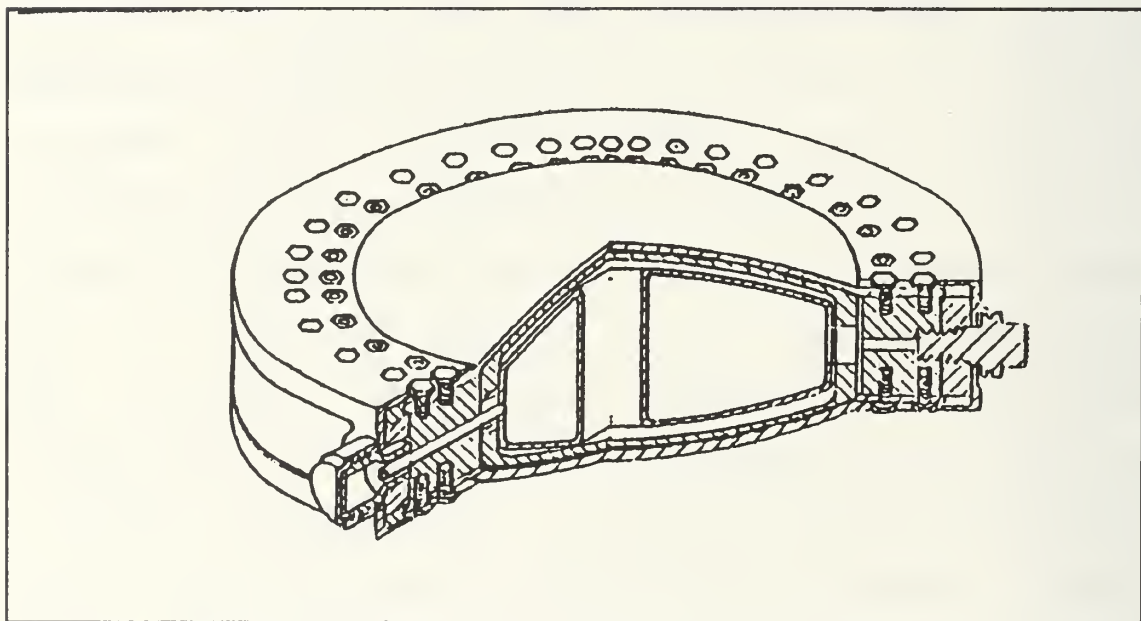

Figure 3   Cutaway view of the transducer. From Ref. 1.

IV. THREE-DIMENSIONAL MODEL

A. INTRODUCTION

As mentioned in Chapter I, the performance modeling of a dense sonar array by means of the T- matrix method requires the computation of the radiation and scattering of an individual transducer. This can be accomplished very accurately using finite element analysis (FEA); however a three-dimensional (3-D) model must be employed.

A 3-D finite element model of a flextensional transducer has an inherent complexity compared to a corresponding 2-D model. The major limitation is the number of degrees of freedom (DOF) available, which depends upon the computer used. A simple transformation of the available 2-D model into a 3-D model would represent roughly more than 10000 DOF just for the solid structure. This already exceeds the maximum allowed degrees of freedom on the MICROVAX VMS system, where the ATILA code is installed, and so is not feasible.

Consequently, the objective of this research became to develop the simplest 3-D model of the Sparton ring-shell transducer that could reproduce, within acceptable error limits when compared with experimental data, its pertinent electroacoustic properties.

B. CHARACTERISTICS OF THE MODEL

1. MATERIAL PROPERTIES

All material properties are included on the first page of Appendix A. The format is according to the ATILA user's manual [Ref. 2].

a. Piezoelectric ceramic

As described before, the transducer has 144 tangentially poled lead zirconate titanate ceramic plates separated by 72 steel wedges, arranged in a 0.8 m diameter ring. An illustration of this arrangement is shown in Fig. 4. In order to simplify the model, a homogeneous ring with material properties equivalent to an adequate combination of the ceramic and steel was used. This is illustrated in Fig. 5. These properties were provided to us by Blottman who obtained them from McMahon [Ref. 4]: "The smeared material properties were obtained by McMahon and Armstrong through in-air measurement of the segmented ring during various stages of assembly. The measurements consist of the resonance and anti-resonance frequencies and the electrical capacitance." These properties take into consideration the compression given by the fiberglass wrapping. The given ceramic properties include losses, but as will be noted later, the results of harmonic analyses that included losses yielded a pressure field about 100 times smaller than the corresponding experimental results.

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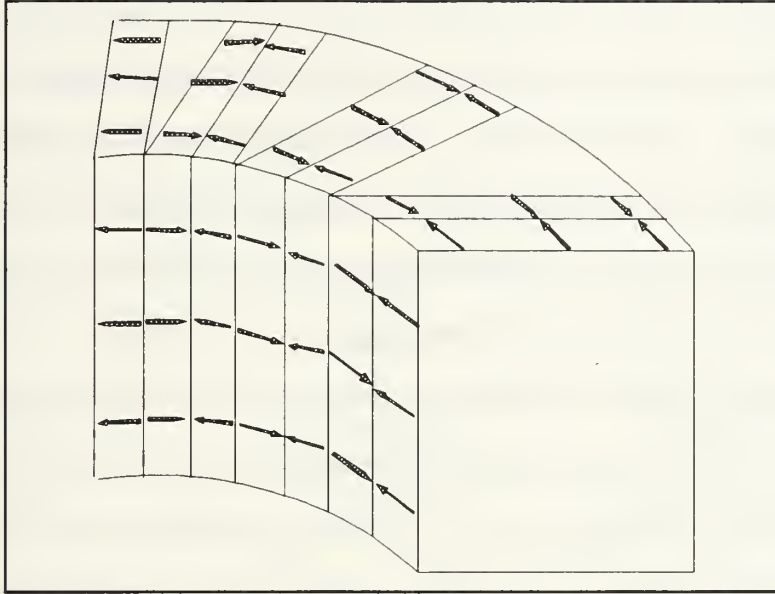
Figure 4   Original ring-shell
arrangement.
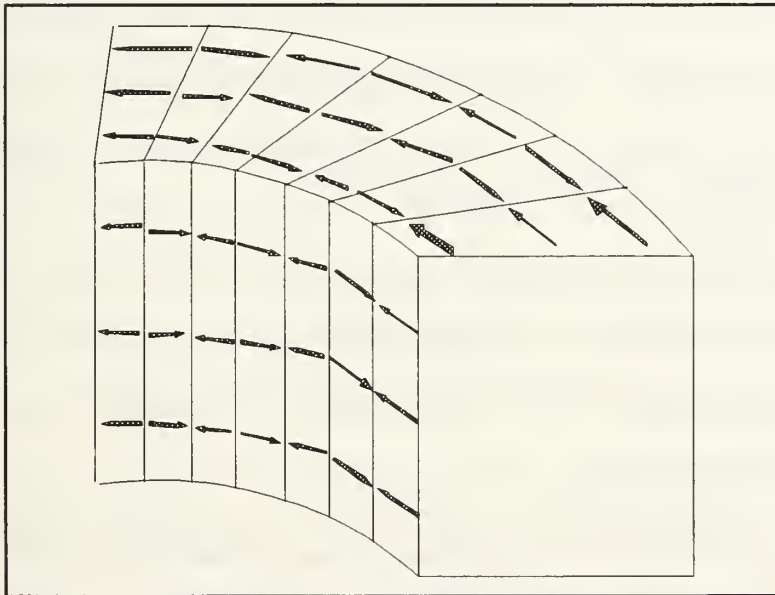
Figure 5   Smeared ring-shell
arrangement.

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To model the transducer with its actual polarization requires the use of a very large number of elements because of the mesh design requirements; therefore the polarization was switched to an equivalent axially-poled ring. The transformation of the polarization is obtained by a suitable exchange of the elastic, piezoelectric and dielectric tensors. The procedure is outlined in the ATILA user's manual [Ref. 2].

Note that the ATILA manual describes the transformation from tangential polarization to radial polarization, which is not the present case. An axial orientation was chosen here rather than a radial orientation in order to simplify the application of electrical boundary conditions. Because of this modification the results of harmonic analyses have to be modified as follows: (1) divide the displacement and pressure fields by the ratio of the circumferential length of a "smeared" piezoelectric element (which is equal to 1/144 of the the ring circumferencial length) to its height, and (2) multiply the electrical impedance by the square of the same ratio. In the present case this ratio is 0.1958.

b. Fiberglass

To simplify the model the fiberglass wrapping was modeled as an equivalent shell; otherwise a considerable number of additional elements would be required.

c. Shells

Their actual material properties were used.

2. TYPES OF ELEMENTS

The following quadratic isoparametric elements, which are described in the ATILA User's Manual [Ref. 2], were used:

TABLE 1

Region	Element	Geometry
Piezoelectric ring	HEXA20P	20-node hexahedron
Shells	SHEL06C	6-node triangle
Fiberglass wrapping	QUAD08E	8-node quadrilateral
Interface solid-fluid	TRIA12I	2x6-node triangle
Interface solid-fluid	QUAD16I	2x8-node quadrilateral
Fluid	PRISM15F	15-node triangular base prism
Fluid	HEXA20F	20-node hexahedron
Radiation surface	TRIA06R	6-node triangle
Radiation surface	QUAD08R	8-node quadrilateral

3. CONSTRAINTS ON MESH DESIGN

Design of the mesh was guided by the following constraints:

a. Aspect ratio [Ref. 2]

The aspect ratio of each element should be not greater than 3, although 4 is considered an acceptable, though less conservative, value.

b. Internal angles [Ref. 2]

The internal angles of each elements should be not smaller than 45 degrees and not greater than 135 degrees, although 30 degrees and 150 degrees are considered, respectively, acceptable, though less conservative, values.

c. Element size [Ref. 2]

As ATILA utilizes quadratic interpolation functions, the size of each element must be not greater than one fourth of a wavelength at the highest frequency of interest.

d. Interelement compatibility

The mesh should be built in such a way that adjacent elements have adjoining sides with collocated nodes to ensure accurate interpolation at their interfaces.

e. Coupling of shell elements to solid elements

Unlike two-dimensional elements, ATILA does not provide three-dimensional transition elements to match solid (piezoelectric) and shell three-dimensional elements. To

perform harmonic analyses it was necessary to delete the rotational degrees-of-freedom (DOF) for the piezoelectric nodes, which means that a clamped condition, which is not quite realistic, was assumed between the shell and the piezoelectric ring. As will be seen later, as the mesh becomes more and more refined, this assumed boundary condition becomes less and less significant.

f. Radiation boundary elements [Ref. 2]

For in-water harmonic analyses (radiation problems) the fluid mesh outer limit must be spherical. This is required by the radiation elements available in the ATILA code. ATILA offers so-called monopole and dipole radiation damping elements. The latter includes not only the monopole term of the radiated field multipolar expansion, but also the dipole term. Dipolar damping elements were selected to terminate the fluid mesh because they provide a more accurate solution than the monopolar damping elements for the mesh employed.

A fluid mesh outer limit radius greater than the far-field distance is desirable to compute the acoustic source pressure level and to compare computed and measured acoustic pressure data. The boundary was placed at a radius R equal to 0.72 m from the transducer's acoustical center, which is beyond 3.5 times the far-field limit of the equivalent piston-like source at the resonance frequency [Ref. 16].

4. FINAL MESH DESIGNS

With the above constraints one coarse mesh was designed for each type of analysis to be performed: in-air modal and in-water harmonic. An in-air modal analysis requires only the transducer to be modeled. An in-water harmonic analysis requires in addition the surrounding fluid to be modeled. The transducer coarse mesh consists of 12 shell elements and 8 solid elements, totaling 250 DOF, and is shown in Fig. 6. The total coarse mesh, which includes the fluid, contains in addition, 20 interface elements, 72 fluid elements, and 28 radiating elements, totaling 1330 DOF. This mesh is shown in Fig. 7. Based on these meshes and using the pre-processor mesh generator MOSAIQUE [Ref. 2], two mesh refinements were obtained. The most refined transducer mesh, which is shown in Fig. 8, consists of 40 shell elements and 24 solid elements, totaling 557 DOF. The corresponding total mesh, which is shown in Fig. 9, contains, in addition, 56 interface elements, 176 fluid elements and 72 radiating elements, totaling 2868 DOF. The input data file of this mesh is given in Appendix A.

SIDE VIEW   TOP VIEW
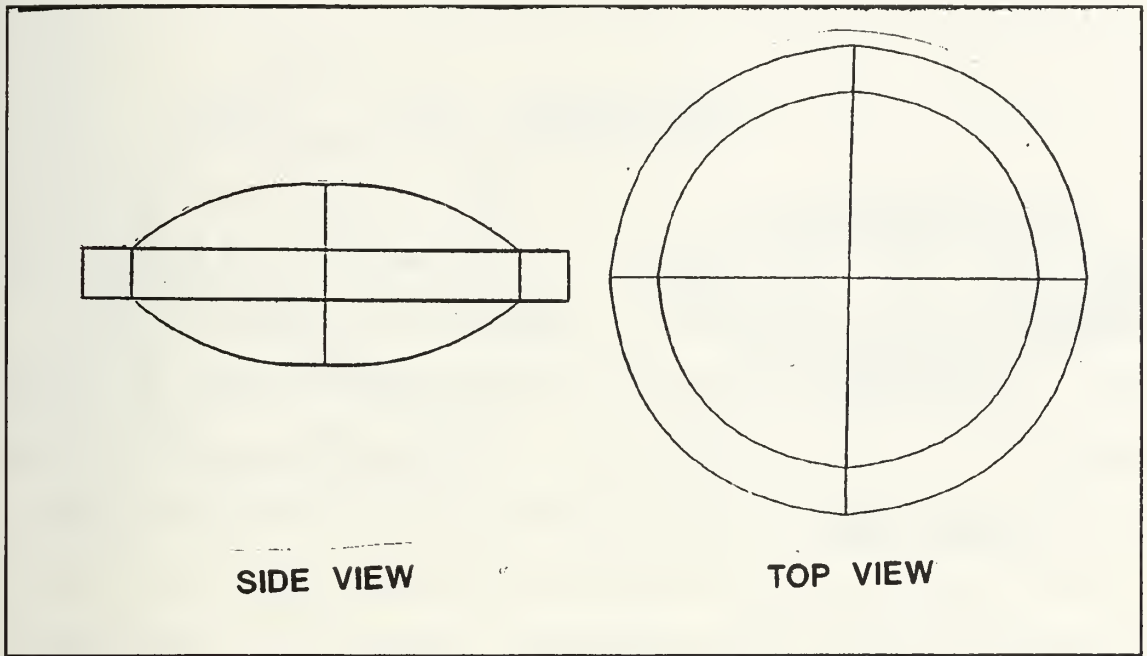
Figure 6 Transducer coarse mesh.

SIDE VIEW   TOP VIEW
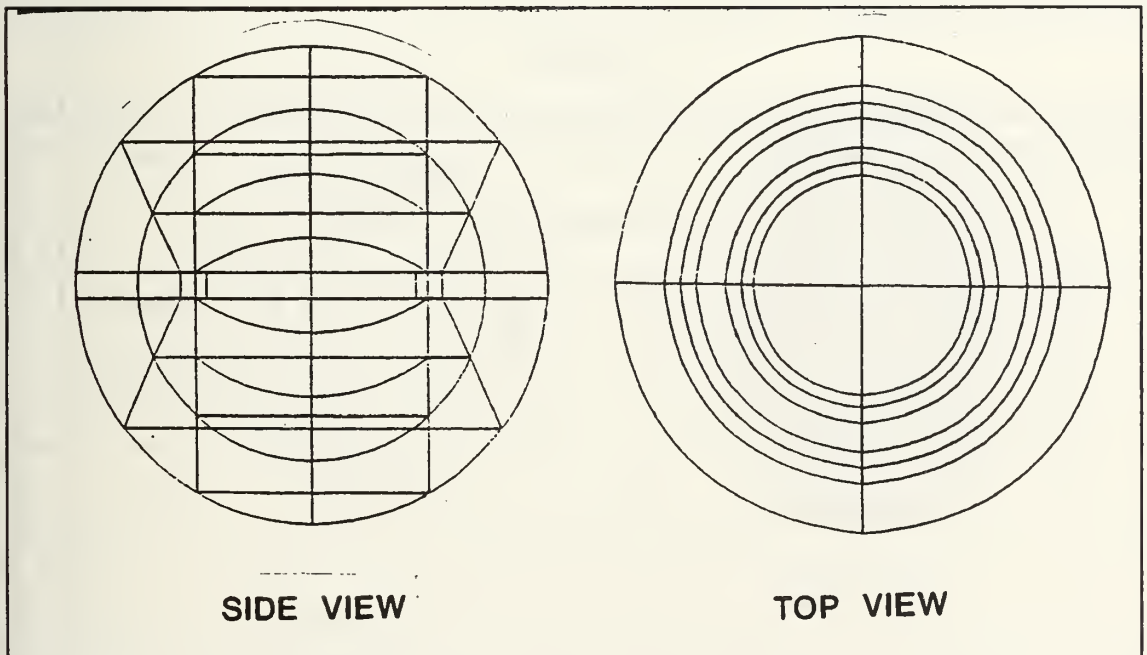
Figure 7 Total coarse mesh.
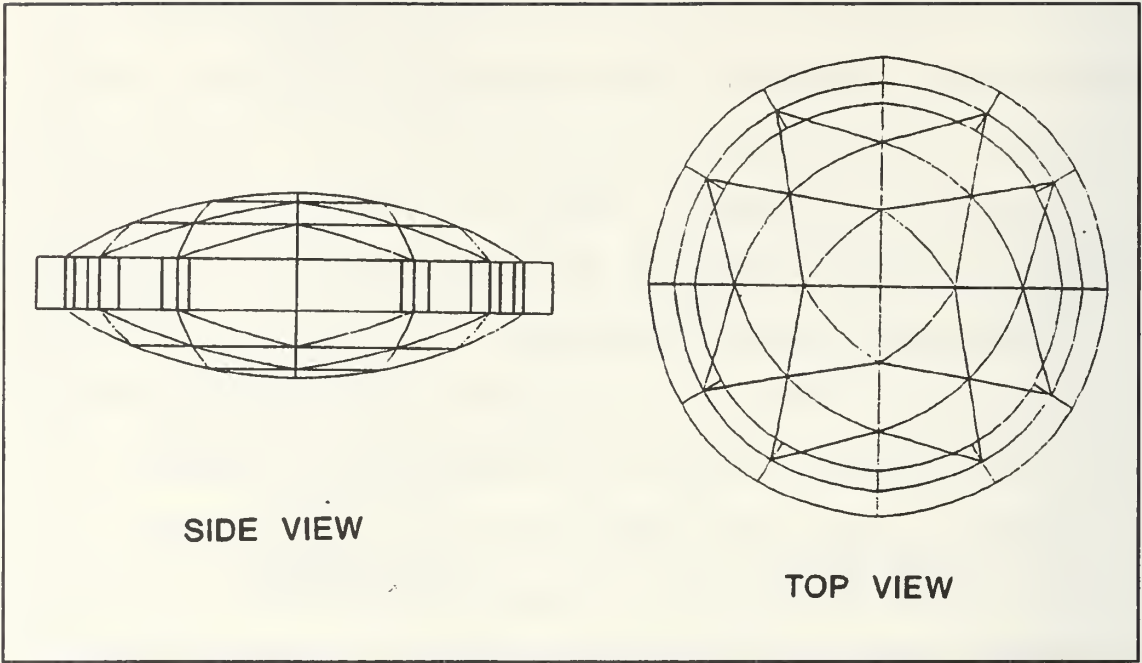
Figure 8 Transducer refined mesh.
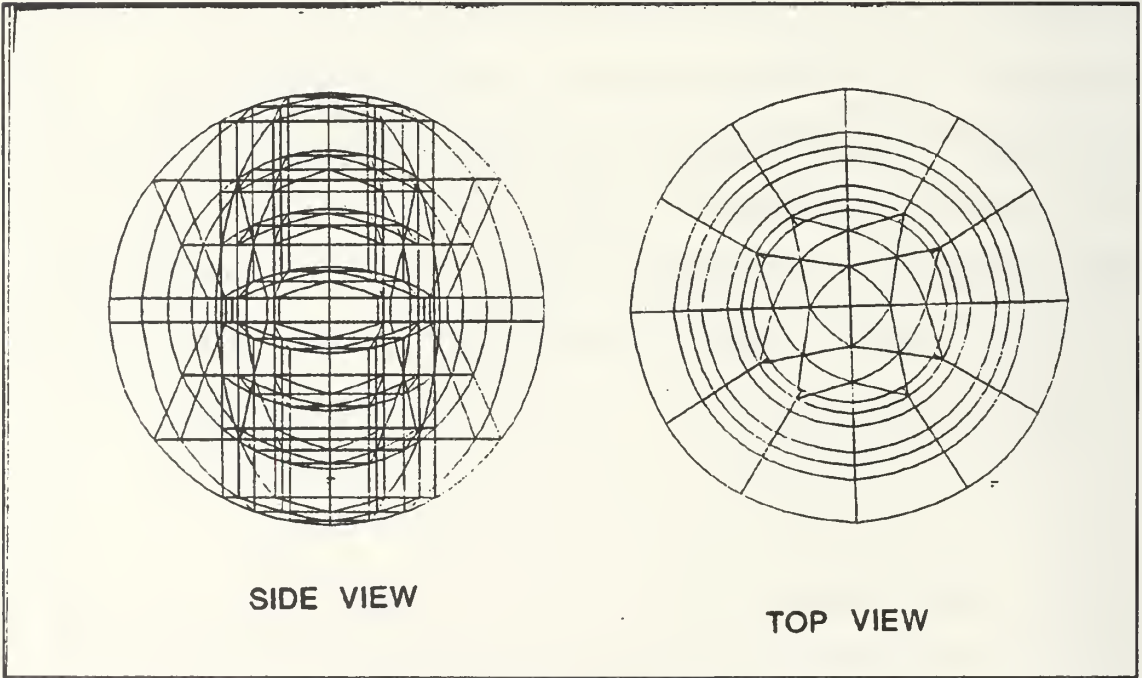
Figure 9 Total refined mesh.

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V. RESULTS

A. IN-AIR MODAL ANALYSES

This analysis corresponds to a free vibration problem, where the eigenfrequencies and eigenmodes are computed. Three mesh grades were analysed. For each one, the first twenty eigenfrequencies and eigenmodes were calculated (including the rigid body ones). The following table, which includes the two-dimensional (2-D) model, summarizes some characteristics of each mesh, along with the resonance frequency of the mode of vibration shown in Fig. 10, which is the most important in operation.

TABLE 2

Mesh	Coarse	Inter-mediate	Refined	2-D Model
Nodes	30	202	350	191
Elements	20	56	180	42
DOF	250	730	1330	392
Micro Vax II CPU Time	580 sec	9 hr	24 hr	14 min
Frequency	1746 Hz	1098 Hz	1002 Hz	957 Hz

The dashed lines in Fig. 10 correspond to the rest position; the solid lines correspond to the displaced position. Note the opposite sense of the motion of the ring and shells.

SIDE VIEW

TOP VIEW
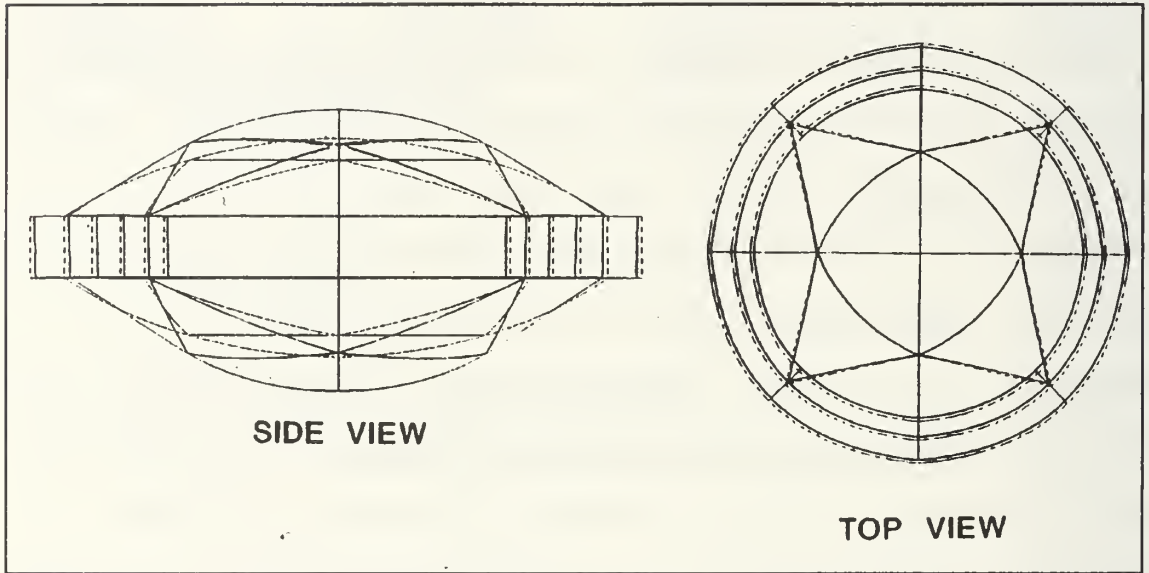
Figure 10   Ring mode of vibration.

A comparison between the results of the ring mode frequency for the more refined 3-D mesh and the 2-D model shows that the first is 5 percent higher than the second. Notice from Table 2 that as the mesh becomes more and more refined, the ring mode natural frequency value approachs more closely the corresponding 2-D model value. This is in part due to the clamped condition between the shell and the piezoelectric ring, which is not quite right, and possibly because of the use of a limited number of elements to describe the shape of the shell.

B. IN-WATER HARMONIC ANALYSES

This analysis corresponds to a forced vibration problem, the excitation being the voltage applied across the electrical terminals of the transducer. Three mesh grades were analysed, now including not only the transducer elements, but the interface, fluid and radiating elements. Internal material losses are not included in this model because the results obtained with such losses included were found to be about 40 dB below the corresponding measured values. The reason for this is not known. It is a problem which appeared only in three-dimensional modeling; no such problem was observed for axisymmetric models. In any case, neglecting internal losses is not a serious deficiency, since radiation losses dominate.

The following table, which includes the two-dimensional model and the manufacturer's measured values, summarizes some characteristics of each mesh along with the maximum sound pressure level (SPL) in dB re 1μPa at a distance of 1m on the acoustic axis when driven by 3000 Vrms at the corresponding frequency.

TABLE 3

Mesh	Coarse	Refined	More Refined	2-D Model	Measured
Nodes	392	972	1696	825	xxxx
Elements	140	360	706	285	xxxx
DOF	557	1501	2868	1026	xxxx
Micro Vax II CPU time	3 hrs	33 hrs	101 hrs	48 min	xxxx
SPL dB re 1μPa	200	209	217	213	213
Frequency Hz	1108	662	610	628	610

The following plot depicts the transmitting voltage response curve obtained by ATILA along with the corresponding manufacturer's data. The model displays a higher peak sound pressure level (SPL) for the primary resonance than the actual transducer. This was expected, since internal material losses were not considered.

It can be observed also from FIG. 11 that the second resonance of the model occurs at a considerably higher frequency than for the actual device. As discussed before, the probable explanation for this is that even the most refined

mesh used is not refined enough to represent the transducer dynamical behavior completely. This is in part due to the clamped condition between the shell and the piezoelectric ring, which is not quite right.

Notice in Table 3 that as the mesh becomes more and more refined, the SPL and resonant frequency values approach more closely the corresponding measured values. An attempt was made to perform a harmonic analysis using a mesh which was more refined (4184 DOF). This was not successful, however; apparently the number of degrees-of-freedom exceeded the limit imposed by our copy of ATILA.
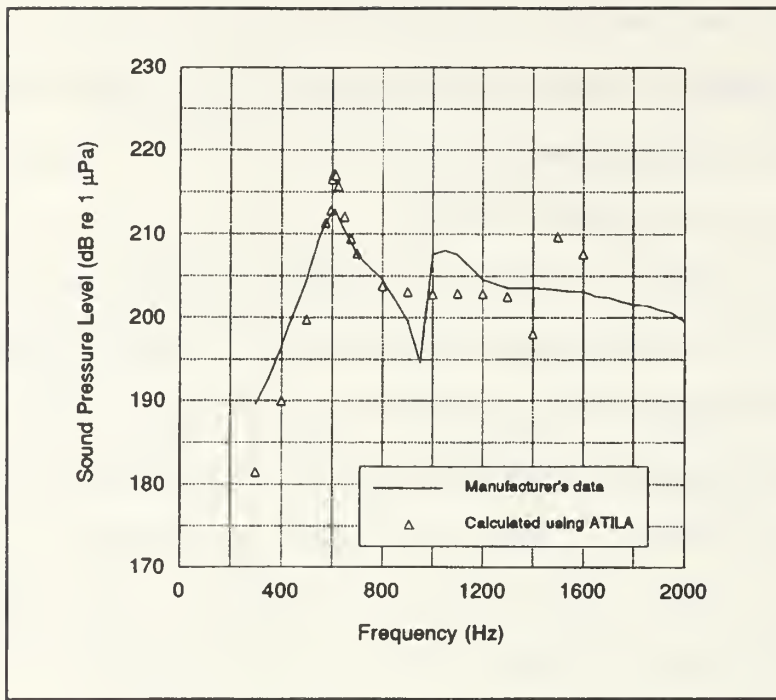
Figure 11 Transmitting voltage response
curve at 1m on acoustic axis
driven at 3000 Vrms.

Plots of electrical impedance versus frequency and
impedance circle for the more refined model are depicted in
Figs. 12 and 13, respectively. Finally, electrical admittance
versus frequency and the admittance circle are shown in Figs.
14 and 15, respectively.
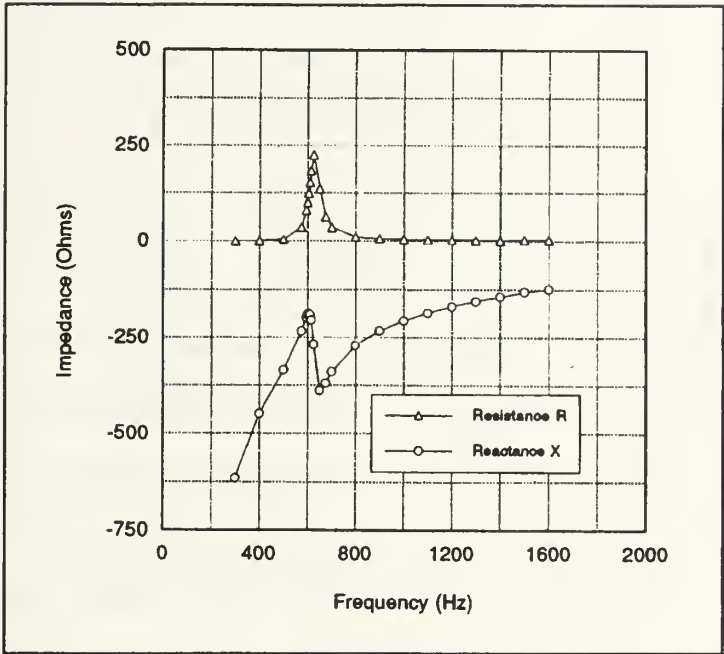
Figure 12 Impedance versus frequency.
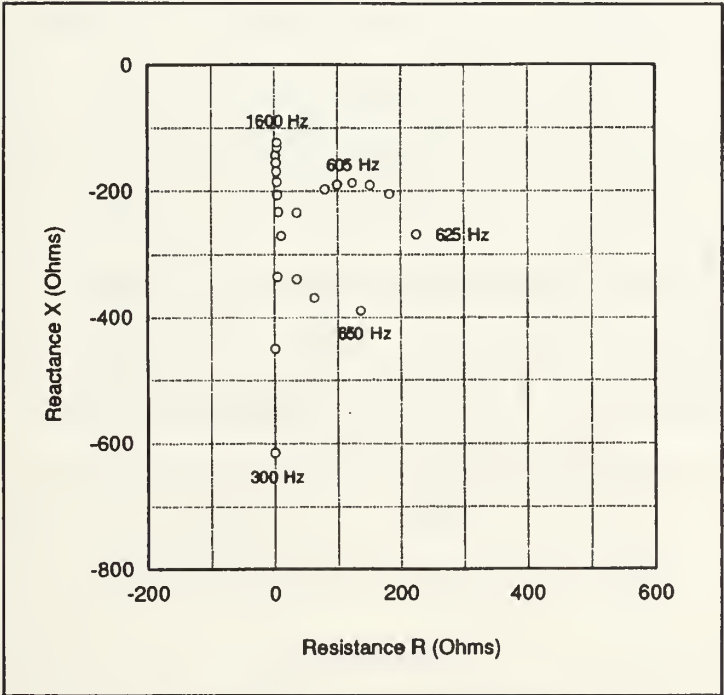
Figure 13 Impedance circle.

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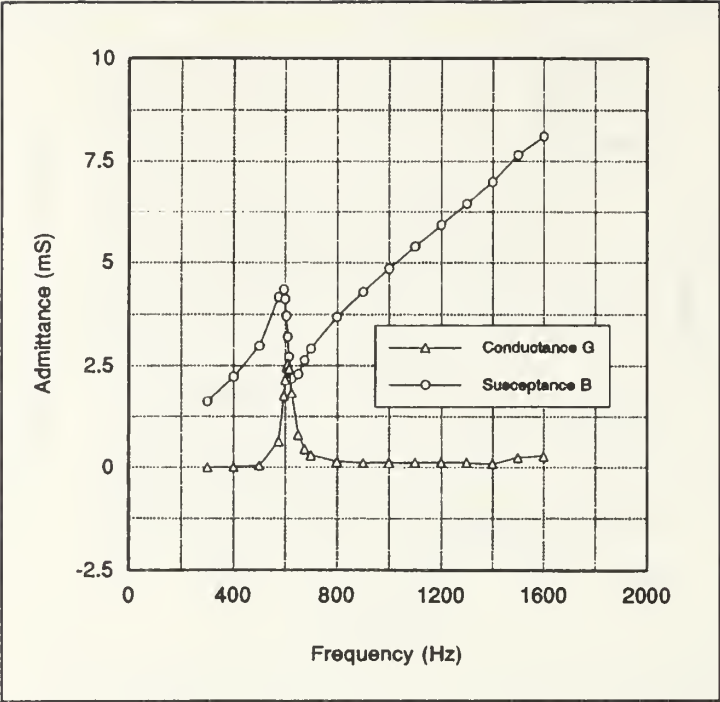
Figure 14 Admittance versus frequency.
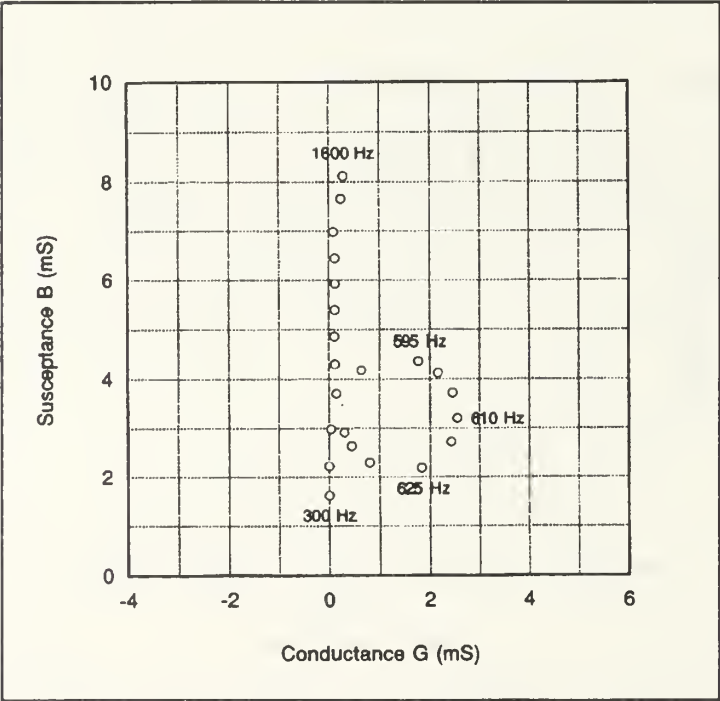
Figure 15 Admittance circle.

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VI. CONCLUSIONS

A three-dimensional model of a ring-shell flextensional transducer was built. Although the model includes many necessary simplifications to handle the problem in the available MICROVAX VMS system, the model is successful in obtaining a maximum sound pressure level from the in-water harmonic analyses that differs by 4 dB from the measured value and is located exactly at the same frequency.

The model does not consider internal material losses because the ATILA code was not able to compute accurate results for the three-dimensional model in this case. These difficulties were not encountered with axisymmetric models.

The model was built for the purpose of computing the radiation and scattering properties of the Sparton ring-shell transducer, the results of which are to be combined with an acoustic field model in order to describe the performance of a dense sonar array. Thus far the model has been used to compute the radiation pressure field. It will be used to compute the scattered pressure field when this capability becomes available in ATILA.

APPENDIX A

INPUT DATA FILE

```
* TRANSDUCER:RINGSHELL / TWO STEP REFINED THREE-DIMENSIONAL MESH.
*
*=====================================================*
* MANUFACTURER:SPARTON OF CANADA.                     *
* MODEL:34A0610.                                      *
* IN-WATER HARMONIC ANALYSIS.                         *
* WRITTEN BY LCDR ROGERIO PINTO ON NOV,30,1992.       *
*=====================================================*
*
SKYLINE REAL
PRECISION DOUBLE
RADIATION DIPOLAR
LCPDDC
  10 ELECPOT PRESSURE THETAX THETAY UX UY UZ
NLOAD
   40
FREQUENCY
   1.100E+03   1.200E+03   1.300E+03 1.400E+03 1.500E+03 1.600E+03
ANALYSIS HARMONIC
MATERIAL
MAVART8D
  0.00000E+00 0.00000E+00 0.75500E+04 0.00000E+00 0.00000E+00 0.00000E+00&
  0.82020E-11-0.35380E-11-0.27030E-11 0.00000E+00 0.00000E+00 0.00000E+00&
 -0.35380E-11 0.11990E-10-0.35380E-11 0.00000E+00 0.00000E+00 0.00000E+00&
 -0.27030E-11-0.35380E-11 0.82020E-11 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.26000E-10 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.21800E-10 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.26000E-10&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00-0.28110E-09&
  0.00000E+00 0.00000E+00 0.00000E+00-0.28110E-09 0.00000E+00 0.00000E+00&
 -0.10000E-09 0.21390E-09-0.10000E-09 0.00000E+00 0.00000E+00 0.00000E+00&
  0.11480E-07 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.11480E-07 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.11480E-07 0.00000E+00 0.00000E+00 0.00000E+00&
 -0.32808E-12 0.14152E-12 0.10812E-12 0.00000E+00 0.00000E+00 0.00000E+00&
  0.14152E-12-0.47960E-12 0.14152E-12 0.00000E+00 0.00000E+00 0.00000E+00&
  0.10812E-12 0.14152E-12-0.14152E-12 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00-0.10400E-11 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00-0.87200E-11 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00-0.10400E-11&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
 -0.45920E-12 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00-0.45920E-12 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00&
  0.00000E+00 0.00000E+00-0.45920E-12 0.00000E+00 0.00000E+00 0.00000E+00
ST4340
  0.100E+01   0.195E+12   0.280E+00   0.770E+04   0.000E+00   0.100E+01 &
  0.195E+12   0.280E+00   0.770E+04
FICFIBER
  0.645E+09   0.400E+00   0.806E+04

GEOMETRY
    1
  0.105E-01       *THICKNESS OF SHELLS.
    2
  0.500E-02       *THICKNESS OF FICTICIOUS FIBER WRAPPING.
    3
  0.720E+00       *RADIUS OF FLUID MESH OUTER LIMIT.
```

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```
GEOMETRY  POLARIZA  CARTESIA
      4
  0.000E+00   0.000E+00   0.180E+03
      5
  0.000E+00   0.000E+00   0.210E+03
      6
  0.000E+00   0.000E+00   0.240E+03
      7
  0.000E+00   0.000E+00   0.270E+03
      8
  0.000E+00   0.000E+00   0.300E+03
      9
  0.000E+00   0.000E+00   0.330E+03
     10
  0.000E+00   0.000E+00   0.000E+00
     11
  0.000E+00   0.000E+00   0.030E+03
     12
  0.000E+00   0.000E+00   0.060E+03
     13
  0.000E+00   0.000E+00   0.090E+03
     14
  0.000E+00   0.000E+00   0.120E+03
     15
  0.000E+00   0.000E+00   0.150E+03

NODES
*      1 * -0.40000E-01 -0.39900E+00   0.00000E+00
*      2 * -0.40000E-01 -0.37841E+00  -0.11241E+00
*      3 * -0.40000E-01 -0.33946E+00  -0.20646E+00
*      4 * -0.40000E-01 -0.28214E+00  -0.28214E+00
*      5 * -0.40000E-01 -0.20646E+00  -0.33946E+00
*      6 * -0.40000E-01 -0.11241E+00  -0.37841E+00
*      7 * -0.40000E-01  0.00000E+00  -0.39900E+00
*      8 * -0.40000E-01 -0.37679E+00   0.00000E+00
*      9 * -0.40000E-01 -0.32056E+00  -0.19497E+00
*     10 * -0.40000E-01 -0.19497E+00  -0.32056E+00
*     11 * -0.40000E-01  0.00000E+00  -0.37679E+00
*     12 * -0.40000E-01 -0.35458E+00   0.00000E+00
*     13 * -0.40000E-01 -0.33628E+00  -0.99897E-01
*     14 * -0.40000E-01 -0.30167E+00  -0.18347E+00
*     15 * -0.40000E-01 -0.25073E+00  -0.25073E+00
*     16 * -0.40000E-01 -0.18347E+00  -0.30167E+00
*     17 * -0.40000E-01 -0.99897E-01  -0.33628E+00
*     18 * -0.40000E-01  0.00000E+00  -0.35458E+00
*     19 *  0.00000E+00 -0.39900E+00   0.00000E+00
*     20 *  0.00000E+00 -0.33946E+00  -0.20646E+00
*     21 *  0.00000E+00 -0.20646E+00  -0.33946E+00
*     22 *  0.00000E+00  0.00000E+00  -0.39900E+00
*     23 *  0.00000E+00 -0.35458E+00   0.00000E+00
*     24 *  0.00000E+00 -0.30167E+00  -0.18347E+00
*     25 *  0.00000E+00 -0.18347E+00  -0.30167E+00
*     26 *  0.00000E+00  0.00000E+00  -0.35458E+00
*     27 *  0.40000E-01 -0.39900E+00   0.00000E+00
*     28 *  0.40000E-01 -0.37841E+00  -0.11241E+00
*     29 *  0.40000E-01 -0.33946E+00  -0.20646E+00
*     30 *  0.40000E-01 -0.28214E+00  -0.28214E+00
*     31 *  0.40000E-01 -0.20646E+00  -0.33946E+00
*     32 *  0.40000E-01 -0.11241E+00  -0.37841E+00
*     33 *  0.40000E-01  0.00000E+00  -0.39900E+00
*     34 *  0.40000E-01 -0.37679E+00   0.00000E+00
*     35 *  0.40000E-01 -0.32056E+00  -0.19497E+00
*     36 *  0.40000E-01 -0.19497E+00  -0.32056E+00
*     37 *  0.40000E-01  0.00000E+00  -0.37679E+00
*     38 *  0.40000E-01 -0.35458E+00   0.00000E+00
*     39 *  0.40000E-01 -0.33628E+00  -0.99897E-01
*     40 *  0.40000E-01 -0.30167E+00  -0.18347E+00
*     41 *  0.40000E-01 -0.25073E+00  -0.25073E+00
*     42 *  0.40000E-01 -0.18347E+00  -0.30167E+00
```

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```
*    43 *   0.40000E-01 -0.99897E-01 -0.33628E+00
*    44 *   0.40000E-01  0.00000E+00 -0.35458E+00
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*    49 * -0.40000E-01 -0.31900E+00  0.00000E+00
*    50 * -0.40000E-01 -0.30254E+00 -0.89872E-01
*    51 * -0.40000E-01 -0.27140E+00 -0.16506E+00
*    52 * -0.40000E-01 -0.22557E+00 -0.22557E+00
*    53 * -0.40000E-01 -0.16506E+00 -0.27140E+00
*    54 * -0.40000E-01 -0.89872E-01 -0.30254E+00
*    55 * -0.40000E-01  0.00000E+00 -0.31900E+00
*    56 *   0.00000E+00 -0.31900E+00  0.00000E+00
*    57 *   0.00000E+00 -0.27140E+00 -0.16506E+00
*    58 *   0.00000E+00 -0.16506E+00 -0.27140E+00
*    59 *   0.00000E+00  0.00000E+00 -0.31900E+00
*    60 *   0.40000E-01 -0.33679E+00  0.00000E+00
*    61 *   0.40000E-01 -0.28653E+00 -0.17427E+00
*    62 *   0.40000E-01 -0.17427E+00 -0.28653E+00
*    63 *   0.40000E-01  0.00000E+00 -0.33679E+00
*    64 *   0.40000E-01 -0.31900E+00  0.00000E+00
*    65 *   0.40000E-01 -0.30254E+00 -0.89872E-01
*    66 *   0.40000E-01 -0.27140E+00 -0.16506E+00
*    67 *   0.40000E-01 -0.22557E+00 -0.22557E+00
*    68 *   0.40000E-01 -0.16506E+00 -0.27140E+00
*    69 *   0.40000E-01 -0.89872E-01 -0.30254E+00
*    70 *   0.40000E-01  0.00000E+00 -0.31900E+00
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*    72 * -0.40000E-01  0.20646E+00 -0.33946E+00
*    73 * -0.40000E-01  0.28214E+00 -0.28214E+00
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*    75 * -0.40000E-01  0.37841E+00 -0.11241E+00
*    76 * -0.40000E-01  0.39900E+00  0.00000E+00
*    77 * -0.40000E-01  0.19497E+00 -0.32056E+00
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*    79 * -0.40000E-01  0.37679E+00  0.00000E+00
*    80 * -0.40000E-01  0.99897E-01 -0.33628E+00
*    81 * -0.40000E-01  0.18347E+00 -0.30167E+00
*    82 * -0.40000E-01  0.25073E+00 -0.25073E+00
*    83 * -0.40000E-01  0.30167E+00 -0.18347E+00
*    84 * -0.40000E-01  0.33628E+00 -0.99897E-01
*    85 * -0.40000E-01  0.35458E+00  0.00000E+00
*    86 *   0.00000E+00  0.20646E+00 -0.33946E+00
*    87 *   0.00000E+00  0.33946E+00 -0.20646E+00
*    88 *   0.00000E+00  0.39900E+00  0.00000E+00
*    89 *   0.00000E+00  0.18347E+00 -0.30167E+00
*    90 *   0.00000E+00  0.30167E+00 -0.18347E+00
*    91 *   0.00000E+00  0.35458E+00  0.00000E+00
*    92 *   0.40000E-01  0.11241E+00 -0.37841E+00
*    93 *   0.40000E-01  0.20646E+00 -0.33946E+00
*    94 *   0.40000E-01  0.28214E+00 -0.28214E+00
*    95 *   0.40000E-01  0.33946E+00 -0.20646E+00
*    96 *   0.40000E-01  0.37841E+00 -0.11241E+00
*    97 *   0.40000E-01  0.39900E+00  0.00000E+00
*    98 *   0.40000E-01  0.19497E+00 -0.32056E+00
*    99 *   0.40000E-01  0.32056E+00 -0.19497E+00
*   100 *   0.40000E-01  0.37679E+00  0.00000E+00
*   101 *   0.40000E-01  0.99897E-01 -0.33628E+00
*   102 *   0.40000E-01  0.18347E+00 -0.30167E+00
*   103 *   0.40000E-01  0.25073E+00 -0.25073E+00
*   104 *   0.40000E-01  0.30167E+00 -0.18347E+00
*   105 *   0.40000E-01  0.33628E+00 -0.99897E-01
*   106 *   0.40000E-01  0.35458E+00  0.00000E+00
*   107 * -0.40000E-01  0.17427E+00 -0.28653E+00
*   108 * -0.40000E-01  0.28653E+00 -0.17427E+00
*   109 * -0.40000E-01  0.33679E+00  0.00000E+00
*   110 * -0.40000E-01  0.89872E-01 -0.30254E+00
*   111 * -0.40000E-01  0.16506E+00 -0.27140E+00
```

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```
*  112 *  -0.40000E-01   0.22557E+00  -0.22557E+00
*  113 *  -0.40000E-01   0.27140E+00  -0.16506E+00
*  114 *  -0.40000E-01   0.30254E+00  -0.89872E-01
*  115 *  -0.40000E-01   0.31900E+00   0.00000E+00
*  116 *   0.00000E+00   0.16506E+00  -0.27140E+00
*  117 *   0.00000E+00   0.27140E+00  -0.16506E+00
*  118 *   0.00000E+00   0.31900E+00   0.00000E+00
*  119 *   0.40000E-01   0.17427E+00  -0.28653E+00
*  120 *   0.40000E-01   0.28653E+00  -0.17427E+00
*  121 *   0.40000E-01   0.33679E+00   0.00000E+00
*  122 *   0.40000E-01   0.89872E-01  -0.30254E+00
*  123 *   0.40000E-01   0.16506E+00  -0.27140E+00
*  124 *   0.40000E-01   0.22557E+00  -0.22557E+00
*  125 *   0.40000E-01   0.27140E+00  -0.16506E+00
*  126 *   0.40000E-01   0.30254E+00  -0.89872E-01
*  127 *   0.40000E-01   0.31900E+00   0.00000E+00
*  128 *  -0.40000E-01   0.37841E+00   0.11241E+00
*  129 *  -0.40000E-01   0.33946E+00   0.20646E+00
*  130 *  -0.40000E-01   0.28214E+00   0.28214E+00
*  131 *  -0.40000E-01   0.20646E+00   0.33946E+00
*  132 *  -0.40000E-01   0.11241E+00   0.37841E+00
*  133 *  -0.40000E-01   0.00000E+00   0.39900E+00
*  134 *  -0.40000E-01   0.32056E+00   0.19497E+00
*  135 *  -0.40000E-01   0.19497E+00   0.32056E+00
*  136 *  -0.40000E-01   0.00000E+00   0.37679E+00
*  137 *  -0.40000E-01   0.33628E+00   0.99897E-01
*  138 *  -0.40000E-01   0.30167E+00   0.18347E+00
*  139 *  -0.40000E-01   0.25073E+00   0.25073E+00
*  140 *  -0.40000E-01   0.18347E+00   0.30167E+00
*  141 *  -0.40000E-01   0.99897E-01   0.33628E+00
*  142 *  -0.40000E-01   0.00000E+00   0.35458E+00
*  143 *   0.00000E+00   0.33946E+00   0.20646E+00
*  144 *   0.00000E+00   0.20646E+00   0.33946E+00
*  145 *   0.00000E+00   0.00000E+00   0.39900E+00
*  146 *   0.00000E+00   0.30167E+00   0.18347E+00
*  147 *   0.00000E+00   0.18347E+00   0.30167E+00
*  148 *   0.00000E+00   0.00000E+00   0.35458E+00
*  149 *   0.40000E-01   0.37841E+00   0.11241E+00
*  150 *   0.40000E-01   0.33946E+00   0.20646E+00
*  151 *   0.40000E-01   0.28214E+00   0.28214E+00
*  152 *   0.40000E-01   0.20646E+00   0.33946E+00
*  153 *   0.40000E-01   0.11241E+00   0.37841E+00
*  154 *   0.40000E-01   0.00000E+00   0.39900E+00
*  155 *   0.40000E-01   0.32056E+00   0.19497E+00
*  156 *   0.40000E-01   0.19497E+00   0.32056E+00
*  157 *   0.40000E-01   0.00000E+00   0.37679E+00
*  158 *   0.40000E-01   0.33628E+00   0.99897E-01
*  159 *   0.40000E-01   0.30167E+00   0.18347E+00
*  160 *   0.40000E-01   0.25073E+00   0.25073E+00
*  161 *   0.40000E-01   0.18347E+00   0.30167E+00
*  162 *   0.40000E-01   0.99897E-01   0.33628E+00
*  163 *   0.40000E-01   0.00000E+00   0.35458E+00
*  164 *  -0.40000E-01   0.28653E+00   0.17427E+00
*  165 *  -0.40000E-01   0.17427E+00   0.28653E+00
*  166 *  -0.40000E-01   0.00000E+00   0.33679E+00
*  167 *  -0.40000E-01   0.30254E+00   0.89872E-01
*  168 *  -0.40000E-01   0.27140E+00   0.16506E+00
*  169 *  -0.40000E-01   0.22557E+00   0.22557E+00
*  170 *  -0.40000E-01   0.16506E+00   0.27140E+00
*  171 *  -0.40000E-01   0.89872E-01   0.30254E+00
*  172 *  -0.40000E-01   0.00000E+00   0.31900E+00
*  173 *   0.00000E+00   0.27140E+00   0.16506E+00
*  174 *   0.00000E+00   0.16506E+00   0.27140E+00
*  175 *   0.00000E+00   0.00000E+00   0.31900E+00
*  176 *   0.40000E-01   0.28653E+00   0.17427E+00
*  177 *   0.40000E-01   0.17427E+00   0.28653E+00
*  178 *   0.40000E-01   0.00000E+00   0.33679E+00
*  179 *   0.40000E-01   0.30254E+00   0.89872E-01
*  180 *   0.40000E-01   0.27140E+00   0.16506E+00
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*  181  *   0.40000E-01   0.22557E+00   0.22557E+00
*  182  *   0.40000E-01   0.16506E+00   0.27140E+00
*  183  *   0.40000E-01   0.89872E-01   0.30254E+00
*  184  *   0.40000E-01   0.00000E+00   0.31900E+00
*  185  *  -0.40000E-01  -0.11241E+00   0.37841E+00
*  186  *  -0.40000E-01  -0.20646E+00   0.33946E+00
*  187  *  -0.40000E-01  -0.28214E+00   0.28214E+00
*  188  *  -0.40000E-01  -0.33946E+00   0.20646E+00
*  189  *  -0.40000E-01  -0.37841E+00   0.11241E+00
*  190  *  -0.40000E-01  -0.19497E+00   0.32056E+00
*  191  *  -0.40000E-01  -0.32056E+00   0.19497E+00
*  192  *  -0.40000E-01  -0.99897E-01   0.33628E+00
*  193  *  -0.40000E-01  -0.18347E+00   0.30167E+00
*  194  *  -0.40000E-01  -0.25073E+00   0.25073E+00
*  195  *  -0.40000E-01  -0.30167E+00   0.18347E+00
*  196  *  -0.40000E-01  -0.33628E+00   0.99897E-01
*  197  *   0.00000E+00  -0.20646E+00   0.33946E+00
*  198  *   0.00000E+00  -0.33946E+00   0.20646E+00
*  199  *   0.00000E+00  -0.18347E+00   0.30167E+00
*  200  *   0.00000E+00  -0.30167E+00   0.18347E+00
*  201  *   0.40000E-01  -0.11241E+00   0.37841E+00
*  202  *   0.40000E-01  -0.20646E+00   0.33946E+00
*  203  *   0.40000E-01  -0.28214E+00   0.28214E+00
*  204  *   0.40000E-01  -0.33946E+00   0.20646E+00
*  205  *   0.40000E-01  -0.37841E+00   0.11241E+00
*  206  *   0.40000E-01  -0.19497E+00   0.32056E+00
*  207  *   0.40000E-01  -0.32056E+00   0.19497E+00
*  208  *   0.40000E-01  -0.99897E-01   0.33628E+00
*  209  *   0.40000E-01  -0.18347E+00   0.30167E+00
*  210  *   0.40000E-01  -0.25073E+00   0.25073E+00
*  211  *   0.40000E-01  -0.30167E+00   0.18347E+00
*  212  *   0.40000E-01  -0.33628E+00   0.99897E-01
*  213  *  -0.40000E-01  -0.17427E+00   0.28653E+00
*  214  *  -0.40000E-01  -0.28653E+00   0.17427E+00
*  215  *  -0.40000E-01  -0.89872E-01   0.30254E+00
*  216  *  -0.40000E-01  -0.16506E+00   0.27140E+00
*  217  *  -0.40000E-01  -0.22557E+00   0.22557E+00
*  218  *  -0.40000E-01  -0.27140E+00   0.16506E+00
*  219  *  -0.40000E-01  -0.30254E+00   0.89872E-01
*  220  *   0.00000E+00  -0.16506E+00   0.27140E+00
*  221  *   0.00000E+00  -0.27140E+00   0.16506E+00
*  222  *   0.40000E-01  -0.17427E+00   0.28653E+00
*  223  *   0.40000E-01  -0.28653E+00   0.17427E+00
*  224  *   0.40000E-01  -0.89872E-01   0.30254E+00
*  225  *   0.40000E-01  -0.16506E+00   0.27140E+00
*  226  *   0.40000E-01  -0.22557E+00   0.22557E+00
*  227  *   0.40000E-01  -0.27140E+00   0.16506E+00
*  228  *   0.40000E-01  -0.30254E+00   0.89872E-01
*  229  *   0.69986E-01  -0.30439E+00   0.00000E+00
*  230  *   0.69986E-01  -0.27616E+00  -0.93519E-01
*  231  *   0.69986E-01  -0.23160E+00  -0.17072E+00
*  232  *   0.69986E-01  -0.17072E+00  -0.23160E+00
*  233  *   0.69986E-01  -0.93519E-01  -0.27616E+00
*  234  *   0.69986E-01   0.00000E+00  -0.30439E+00
*  235  *   0.94876E-01  -0.25064E+00   0.00000E+00
*  236  *   0.94876E-01  -0.21246E+00  -0.87141E-01
*  237  *   0.94876E-01  -0.15796E+00  -0.15796E+00
*  238  *   0.94876E-01  -0.87141E-01  -0.21246E+00
*  239  *   0.94876E-01   0.00000E+00  -0.25064E+00
*  240  *   0.11467E+00  -0.19333E+00   0.00000E+00
*  241  *   0.11467E+00  -0.14521E+00  -0.80763E-01
*  242  *   0.11467E+00  -0.80763E-01  -0.14521E+00
*  243  *   0.11467E+00   0.00000E+00  -0.19333E+00
*  244  *   0.12937E+00  -0.13245E+00   0.00000E+00
*  245  *   0.12937E+00  -0.74386E-01  -0.74386E-01
*  246  *   0.12937E+00   0.00000E+00  -0.13245E+00
*  247  *   0.13897E+00  -0.68008E-01   0.00000E+00
*  248  *   0.13897E+00   0.00000E+00  -0.68008E-01
*  249  *   0.14348E+00   0.00000E+00   0.00000E+00
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*   250 *   0.69986E-01   0.93519E-01  -0.27616E+00
*   251 *   0.69986E-01   0.17072E+00  -0.23160E+00
*   252 *   0.69986E-01   0.23160E+00  -0.17072E+00
*   253 *   0.69986E-01   0.27616E+00  -0.93519E-01
*   254 *   0.69986E-01   0.30439E+00   0.00000E+00
*   255 *   0.94876E-01   0.87141E-01  -0.21246E+00
*   256 *   0.94876E-01   0.15796E+00  -0.15796E+00
*   257 *   0.94876E-01   0.21246E+00  -0.87141E-01
*   258 *   0.94876E-01   0.25064E+00   0.00000E+00
*   259 *   0.11467E+00   0.80763E-01  -0.14521E+00
*   260 *   0.11467E+00   0.14521E+00  -0.80763E-01
*   261 *   0.11467E+00   0.19333E+00   0.00000E+00
*   262 *   0.12937E+00   0.74386E-01  -0.74386E-01
*   263 *   0.12937E+00   0.13245E+00   0.00000E+00
*   264 *   0.13897E+00   0.68008E-01   0.00000E+00
*   265 *   0.69986E-01   0.27616E+00   0.93519E-01
*   266 *   0.69986E-01   0.23160E+00   0.17072E+00
*   267 *   0.69986E-01   0.17072E+00   0.23160E+00
*   268 *   0.69986E-01   0.93519E-01   0.27616E+00
*   269 *   0.69986E-01   0.00000E+00   0.30439E+00
*   270 *   0.94876E-01   0.21246E+00   0.87141E-01
*   271 *   0.94876E-01   0.15796E+00   0.15796E+00
*   272 *   0.94876E-01   0.87141E-01   0.21246E+00
*   273 *   0.94876E-01   0.00000E+00   0.25064E+00
*   274 *   0.11467E+00   0.14521E+00   0.80763E-01
*   275 *   0.11467E+00   0.80763E-01   0.14521E+00
*   276 *   0.11467E+00   0.00000E+00   0.19333E+00
*   277 *   0.12937E+00   0.74386E-01   0.74386E-01
*   278 *   0.12937E+00   0.00000E+00   0.13245E+00
*   279 *   0.13897E+00   0.00000E+00   0.68008E-01
*   280 *   0.69986E-01  -0.93519E-01   0.27616E+00
*   281 *   0.69986E-01  -0.17072E+00   0.23160E+00
*   282 *   0.69986E-01  -0.23160E+00   0.17072E+00
*   283 *   0.69986E-01  -0.27616E+00   0.93519E-01
*   284 *   0.94876E-01  -0.87141E-01   0.21246E+00
*   285 *   0.94876E-01  -0.15796E+00   0.15796E+00
*   286 *   0.94876E-01  -0.21246E+00   0.87141E-01
*   287 *   0.11467E+00  -0.80763E-01   0.14521E+00
*   288 *   0.11467E+00  -0.14521E+00   0.80763E-01
*   289 *   0.12937E+00  -0.74386E-01   0.74386E-01
*   290 *  -0.69986E-01  -0.30439E+00   0.00000E+00
*   291 *  -0.69986E-01  -0.27616E+00  -0.93519E-01
*   292 *  -0.69986E-01  -0.23160E+00  -0.17072E+00
*   293 *  -0.69986E-01  -0.17072E+00  -0.23160E+00
*   294 *  -0.69986E-01  -0.93519E-01  -0.27616E+00
*   295 *  -0.69986E-01   0.00000E+00  -0.30439E+00
*   296 *  -0.94876E-01  -0.25064E+00   0.00000E+00
*   297 *  -0.94876E-01  -0.21246E+00  -0.87141E-01
*   298 *  -0.94876E-01  -0.15796E+00  -0.15796E+00
*   299 *  -0.94876E-01  -0.87141E-01  -0.21246E+00
*   300 *  -0.94876E-01   0.00000E+00  -0.25064E+00
*   301 *  -0.11467E+00  -0.19333E+00   0.00000E+00
*   302 *  -0.11467E+00  -0.14521E+00  -0.80763E-01
*   303 *  -0.11467E+00  -0.80763E-01  -0.14521E+00
*   304 *  -0.11467E+00   0.00000E+00  -0.19333E+00
*   305 *  -0.12937E+00  -0.13245E+00   0.00000E+00
*   306 *  -0.12937E+00  -0.74386E-01  -0.74386E-01
*   307 *  -0.12937E+00   0.00000E+00  -0.13245E+00
*   308 *  -0.13897E+00  -0.68008E-01   0.00000E+00
*   309 *  -0.13897E+00   0.00000E+00  -0.68008E-01
*   310 *  -0.14348E+00   0.00000E+00   0.00000E+00
*   311 *  -0.69986E-01   0.93519E-01  -0.27616E+00
*   312 *  -0.69986E-01   0.17072E+00  -0.23160E+00
*   313 *  -0.69986E-01   0.23160E+00  -0.17072E+00
*   314 *  -0.69986E-01   0.27616E+00  -0.93519E-01
*   315 *  -0.69986E-01   0.30439E+00   0.00000E+00
*   316 *  -0.94876E-01   0.87141E-01  -0.21246E+00
*   317 *  -0.94876E-01   0.15796E+00  -0.15796E+00
*   318 *  -0.94876E-01   0.21246E+00  -0.87141E-01
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*  319  *  -0.94876E-01   0.25064E+00   0.00000E+00
*  320  *  -0.11467E+00   0.80763E-01  -0.14521E+00
*  321  *  -0.11467E+00   0.14521E+00  -0.80763E-01
*  322  *  -0.11467E+00   0.19333E+00   0.00000E+00
*  323  *  -0.12937E+00   0.74386E-01  -0.74386E-01
*  324  *  -0.12937E+00   0.13245E+00   0.00000E+00
*  325  *  -0.13897E+00   0.68008E-01   0.00000E+00
*  326  *  -0.69986E-01   0.27616E+00   0.93519E-01
*  327  *  -0.69986E-01   0.23160E+00   0.17072E+00
*  328  *  -0.69986E-01   0.17072E+00   0.23160E+00
*  329  *  -0.69986E-01   0.93519E-01   0.27616E+00
*  330  *  -0.69986E-01   0.00000E+00   0.30439E+00
*  331  *  -0.94876E-01   0.21246E+00   0.87141E-01
*  332  *  -0.94876E-01   0.15796E+00   0.15796E+00
*  333  *  -0.94876E-01   0.87141E-01   0.21246E+00
*  334  *  -0.94876E-01   0.00000E+00   0.25064E+00
*  335  *  -0.11467E+00   0.14521E+00   0.80763E-01
*  336  *  -0.11467E+00   0.80763E-01   0.14521E+00
*  337  *  -0.11467E+00   0.00000E+00   0.19333E+00
*  338  *  -0.12937E+00   0.74386E-01   0.74386E-01
*  339  *  -0.12937E+00   0.00000E+00   0.13245E+00
*  340  *  -0.13897E+00   0.00000E+00   0.68008E-01
*  341  *  -0.69986E-01  -0.93519E-01   0.27616E+00
*  342  *  -0.69986E-01  -0.17072E+00   0.23160E+00
*  343  *  -0.69986E-01  -0.23160E+00   0.17072E+00
*  344  *  -0.69986E-01  -0.27616E+00   0.93519E-01
*  345  *  -0.94876E-01  -0.87141E-01   0.21246E+00
*  346  *  -0.94876E-01  -0.15796E+00   0.15796E+00
*  347  *  -0.94876E-01  -0.21246E+00   0.87141E-01
*  348  *  -0.11467E+00  -0.80763E-01   0.14521E+00
*  349  *  -0.11467E+00  -0.14521E+00   0.80763E-01
*  350  *  -0.12937E+00  -0.74386E-01   0.74386E-01
*  351  *  -0.14348E+00   0.00000E+00   0.00000E+00
*  352  *   0.14348E+00   0.00000E+00   0.00000E+00
*  353  *  -0.13897E+00   0.00000E+00  -0.68008E-01
*  354  *   0.13897E+00   0.00000E+00  -0.68008E-01
*  355  *  -0.13897E+00   0.68008E-01   0.00000E+00
*  356  *   0.13897E+00   0.68008E-01   0.00000E+00
*  357  *  -0.13897E+00  -0.68008E-01   0.00000E+00
*  358  *   0.13897E+00  -0.68008E-01   0.00000E+00
*  359  *  -0.13897E+00   0.00000E+00   0.68008E-01
*  360  *   0.13897E+00   0.00000E+00   0.68008E-01
*  361  *  -0.12937E+00   0.74386E-01  -0.74386E-01
*  362  *   0.12937E+00   0.74386E-01  -0.74386E-01
*  363  *  -0.12937E+00  -0.74386E-01  -0.74386E-01
*  364  *   0.12937E+00  -0.74386E-01  -0.74386E-01
*  365  *  -0.12937E+00   0.74386E-01   0.74386E-01
*  366  *   0.12937E+00   0.74386E-01   0.74386E-01
*  367  *  -0.12937E+00  -0.74386E-01   0.74386E-01
*  368  *   0.12937E+00  -0.74386E-01   0.74386E-01
*  369  *  -0.12937E+00   0.00000E+00  -0.13245E+00
*  370  *   0.12937E+00   0.00000E+00  -0.13245E+00
*  371  *  -0.12937E+00   0.13245E+00   0.00000E+00
*  372  *   0.12937E+00   0.13245E+00   0.00000E+00
*  373  *  -0.12937E+00  -0.13245E+00   0.00000E+00
*  374  *   0.12937E+00  -0.13245E+00   0.00000E+00
*  375  *  -0.12937E+00   0.00000E+00   0.13245E+00
*  376  *   0.12937E+00   0.00000E+00   0.13245E+00
*  377  *  -0.11467E+00   0.80763E-01  -0.14521E+00
*  378  *   0.11467E+00   0.80763E-01  -0.14521E+00
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*  381  *  -0.11467E+00   0.14521E+00  -0.80763E-01
*  382  *   0.11467E+00   0.14521E+00  -0.80763E-01
*  383  *  -0.11467E+00  -0.14521E+00  -0.80763E-01
*  384  *   0.11467E+00  -0.14521E+00  -0.80763E-01
*  385  *  -0.11467E+00   0.14521E+00   0.80763E-01
*  386  *   0.11467E+00   0.14521E+00   0.80763E-01
*  387  *  -0.11467E+00  -0.14521E+00   0.80763E-01
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*   388 *   0.11467E+00 -0.14521E+00  0.80763E-01
*   389 * -0.11467E+00  0.80763E-01  0.14521E+00
*   390 *   0.11467E+00  0.80763E-01  0.14521E+00
*   391 * -0.11467E+00 -0.80763E-01  0.14521E+00
*   392 *   0.11467E+00 -0.80763E-01  0.14521E+00
*   393 * -0.11467E+00  0.00000E+00 -0.19333E+00
*   394 *   0.11467E+00  0.00000E+00 -0.19333E+00
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*   396 *   0.11467E+00  0.19333E+00  0.00000E+00
*   397 * -0.11467E+00 -0.19333E+00  0.00000E+00
*   398 *   0.11467E+00 -0.19333E+00  0.00000E+00
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*   400 *   0.11467E+00  0.00000E+00  0.19333E+00
*   401 * -0.24011E+00  0.00000E+00  0.00000E+00
*   402 *   0.24011E+00  0.00000E+00  0.00000E+00
*   403 * -0.94876E-01  0.15796E+00 -0.15796E+00
*   404 *   0.94876E-01  0.15796E+00 -0.15796E+00
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*   409 * -0.94876E-01 -0.15796E+00  0.15796E+00
*   410 *   0.94876E-01 -0.15796E+00  0.15796E+00
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*   412 *   0.94876E-01  0.87141E-01 -0.21246E+00
*   413 * -0.94876E-01 -0.87141E-01 -0.21246E+00
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*   425 * -0.94876E-01 -0.87141E-01  0.21246E+00
*   426 *   0.94876E-01 -0.87141E-01  0.21246E+00
*   427 * -0.22519E+00  0.00000E+00 -0.13245E+00
*   428 *   0.22519E+00  0.00000E+00 -0.13245E+00
*   429 * -0.22519E+00  0.13245E+00  0.00000E+00
*   430 *   0.22519E+00  0.13245E+00  0.00000E+00
*   431 * -0.22519E+00 -0.13245E+00  0.00000E+00
*   432 *   0.22519E+00 -0.13245E+00  0.00000E+00
*   433 * -0.22519E+00  0.00000E+00  0.13245E+00
*   434 *   0.22519E+00  0.00000E+00  0.13245E+00
*   435 * -0.94876E-01  0.00000E+00 -0.25064E+00
*   436 *   0.94876E-01  0.00000E+00 -0.25064E+00
*   437 * -0.94876E-01  0.25064E+00  0.00000E+00
*   438 *   0.94876E-01  0.25064E+00  0.00000E+00
*   439 * -0.94876E-01 -0.25064E+00  0.00000E+00
*   440 *   0.94876E-01 -0.25064E+00  0.00000E+00
*   441 * -0.94876E-01  0.00000E+00  0.25064E+00
*   442 *   0.94876E-01  0.00000E+00  0.25064E+00
*   443 * -0.18798E+00  0.15796E+00 -0.15796E+00
*   444 *   0.18798E+00  0.15796E+00 -0.15796E+00
*   445 * -0.18798E+00 -0.15796E+00 -0.15796E+00
*   446 *   0.18798E+00 -0.15796E+00 -0.15796E+00
*   447 * -0.18798E+00  0.15796E+00  0.15796E+00
*   448 *   0.18798E+00  0.15796E+00  0.15796E+00
*   449 * -0.18798E+00 -0.15796E+00  0.15796E+00
*   450 *   0.18798E+00 -0.15796E+00  0.15796E+00
*   451 * -0.69986E-01  0.17072E+00 -0.23160E+00
*   452 *   0.69986E-01  0.17072E+00 -0.23160E+00
*   453 * -0.69986E-01 -0.17072E+00 -0.23160E+00
*   454 *   0.69986E-01 -0.17072E+00 -0.23160E+00
*   455 * -0.69986E-01  0.23160E+00 -0.17072E+00
*   456 *   0.69986E-01  0.23160E+00 -0.17072E+00
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41

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*   457 *  -0.69986E-01  -0.23160E+00  -0.17072E+00
*   458 *   0.69986E-01  -0.23160E+00  -0.17072E+00
*   459 *  -0.69986E-01   0.23160E+00   0.17072E+00
*   460 *   0.69986E-01   0.23160E+00   0.17072E+00
*   461 *  -0.69986E-01  -0.23160E+00   0.17072E+00
*   462 *   0.69986E-01  -0.23160E+00   0.17072E+00
*   463 *  -0.69986E-01   0.17072E+00   0.23160E+00
*   464 *   0.69986E-01   0.17072E+00   0.23160E+00
*   465 *  -0.69986E-01  -0.17072E+00   0.23160E+00
*   466 *   0.69986E-01  -0.17072E+00   0.23160E+00
*   467 *  -0.69986E-01   0.93519E-01  -0.27616E+00
*   468 *   0.69986E-01   0.93519E-01  -0.27616E+00
*   469 *  -0.69986E-01  -0.93519E-01  -0.27616E+00
*   470 *   0.69986E-01  -0.93519E-01  -0.27616E+00
*   471 *  -0.69986E-01   0.27616E+00  -0.93519E-01
*   472 *   0.69986E-01   0.27616E+00  -0.93519E-01
*   473 *  -0.69986E-01  -0.27616E+00  -0.93519E-01
*   474 *   0.69986E-01  -0.27616E+00  -0.93519E-01
*   475 *  -0.69986E-01   0.27616E+00   0.93519E-01
*   476 *   0.69986E-01   0.27616E+00   0.93519E-01
*   477 *  -0.69986E-01  -0.27616E+00   0.93519E-01
*   478 *   0.69986E-01  -0.27616E+00   0.93519E-01
*   479 *  -0.69986E-01   0.93519E-01   0.27616E+00
*   480 *   0.69986E-01   0.93519E-01   0.27616E+00
*   481 *  -0.69986E-01  -0.93519E-01   0.27616E+00
*   482 *   0.69986E-01  -0.93519E-01   0.27616E+00
*   483 *  -0.69986E-01   0.00000E+00  -0.30439E+00
*   484 *   0.69986E-01   0.00000E+00  -0.30439E+00
*   485 *  -0.69986E-01   0.30439E+00   0.00000E+00
*   486 *   0.69986E-01   0.30439E+00   0.00000E+00
*   487 *  -0.69986E-01  -0.30439E+00   0.00000E+00
*   488 *   0.69986E-01  -0.30439E+00   0.00000E+00
*   489 *  -0.69986E-01   0.00000E+00   0.30439E+00
*   490 *   0.69986E-01   0.00000E+00   0.30439E+00
*   491 *  -0.18798E+00   0.00000E+00  -0.25064E+00
*   492 *   0.18798E+00   0.00000E+00  -0.25064E+00
*   493 *  -0.18798E+00   0.25064E+00   0.00000E+00
*   494 *   0.18798E+00   0.25064E+00   0.00000E+00
*   495 *  -0.18798E+00  -0.25064E+00   0.00000E+00
*   496 *   0.18798E+00  -0.25064E+00   0.00000E+00
*   497 *  -0.18798E+00   0.00000E+00   0.25064E+00
*   498 *   0.18798E+00   0.00000E+00   0.25064E+00
*   499 *  -0.33674E+00   0.00000E+00   0.00000E+00
*   500 *   0.33674E+00   0.00000E+00   0.00000E+00
*   501 *  -0.32102E+00   0.74386E-01  -0.74386E-01
*   502 *   0.32102E+00   0.74386E-01  -0.74386E-01
*   503 *  -0.32102E+00  -0.74386E-01  -0.74386E-01
*   504 *   0.32102E+00  -0.74386E-01  -0.74386E-01
*   505 *  -0.32102E+00   0.74386E-01   0.74386E-01
*   506 *   0.32102E+00   0.74386E-01   0.74386E-01
*   507 *  -0.32102E+00  -0.74386E-01   0.74386E-01
*   508 *   0.32102E+00  -0.74386E-01   0.74386E-01
*   509 *  -0.33190E+00   0.00000E+00  -0.68008E-01
*   510 *   0.33190E+00   0.00000E+00  -0.68008E-01
*   511 *  -0.33190E+00   0.68008E-01   0.00000E+00
*   512 *   0.33190E+00   0.68008E-01   0.00000E+00
*   513 *  -0.33190E+00  -0.68008E-01   0.00000E+00
*   514 *   0.33190E+00  -0.68008E-01   0.00000E+00
*   515 *  -0.33190E+00   0.00000E+00   0.68008E-01
*   516 *   0.33190E+00   0.00000E+00   0.68008E-01
*   517 *  -0.30408E+00   0.80763E-01  -0.14521E+00
*   518 *   0.30408E+00   0.80763E-01  -0.14521E+00
*   519 *  -0.30408E+00  -0.80763E-01  -0.14521E+00
*   520 *   0.30408E+00  -0.80763E-01  -0.14521E+00
*   521 *  -0.30408E+00   0.14521E+00  -0.80763E-01
*   522 *   0.30408E+00   0.14521E+00  -0.80763E-01
*   523 *  -0.30408E+00  -0.14521E+00  -0.80763E-01
*   524 *   0.30408E+00  -0.14521E+00  -0.80763E-01
*   525 *  -0.30408E+00   0.14521E+00   0.80763E-01
```

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*  526 *   0.30408E+00   0.14521E+00   0.80763E-01
*  527 *  -0.30408E+00  -0.14521E+00   0.80763E-01
*  528 *   0.30408E+00  -0.14521E+00   0.80763E-01
*  529 *  -0.30408E+00   0.80763E-01   0.14521E+00
*  530 *   0.30408E+00   0.80763E-01   0.14521E+00
*  531 *  -0.30408E+00  -0.80763E-01   0.14521E+00
*  532 *   0.30408E+00  -0.80763E-01   0.14521E+00
*  533 *  -0.32102E+00   0.00000E+00  -0.13245E+00
*  534 *   0.32102E+00   0.00000E+00  -0.13245E+00
*  535 *  -0.32102E+00   0.13245E+00   0.00000E+00
*  536 *   0.32102E+00   0.13245E+00   0.00000E+00
*  537 *  -0.32102E+00  -0.13245E+00   0.00000E+00
*  538 *   0.32102E+00  -0.13245E+00   0.00000E+00
*  539 *  -0.32102E+00   0.00000E+00   0.13245E+00
*  540 *   0.32102E+00   0.00000E+00   0.13245E+00
*  541 *  -0.40000E-01   0.99897E-01  -0.33628E+00
*  542 *   0.40000E-01   0.99897E-01  -0.33628E+00
*  543 *  -0.40000E-01  -0.99897E-01  -0.33628E+00
*  544 *   0.40000E-01  -0.99897E-01  -0.33628E+00
*  545 *  -0.40000E-01   0.33628E+00  -0.99897E-01
*  546 *   0.40000E-01   0.33628E+00  -0.99897E-01
*  547 *  -0.40000E-01  -0.33628E+00  -0.99897E-01
*  548 *   0.40000E-01  -0.33628E+00  -0.99897E-01
*  549 *  -0.40000E-01   0.33628E+00   0.99897E-01
*  550 *   0.40000E-01   0.33628E+00   0.99897E-01
*  551 *  -0.40000E-01  -0.33628E+00   0.99897E-01
*  552 *   0.40000E-01  -0.33628E+00   0.99897E-01
*  553 *  -0.40000E-01   0.99897E-01   0.33628E+00
*  554 *   0.40000E-01   0.99897E-01   0.33628E+00
*  555 *  -0.40000E-01  -0.99897E-01   0.33628E+00
*  556 *   0.40000E-01  -0.99897E-01   0.33628E+00
*  557 *  -0.40000E-01   0.18347E+00  -0.30167E+00
*  558 *   0.40000E-01   0.18347E+00  -0.30167E+00
*  559 *  -0.40000E-01  -0.30167E+00  -0.18347E+00
*  560 *   0.40000E-01  -0.30167E+00  -0.18347E+00
*  561 *  -0.40000E-01   0.30167E+00   0.18347E+00
*  562 *   0.40000E-01   0.30167E+00   0.18347E+00
*  563 *  -0.40000E-01  -0.18347E+00   0.30167E+00
*  564 *   0.40000E-01  -0.18347E+00   0.30167E+00
*  565 *  -0.40000E-01  -0.18347E+00  -0.30167E+00
*  566 *   0.40000E-01  -0.18347E+00  -0.30167E+00
*  567 *  -0.40000E-01   0.30167E+00  -0.18347E+00
*  568 *   0.40000E-01   0.30167E+00  -0.18347E+00
*  569 *  -0.40000E-01  -0.30167E+00   0.18347E+00
*  570 *   0.40000E-01  -0.30167E+00   0.18347E+00
*  571 *  -0.40000E-01   0.18347E+00   0.30167E+00
*  572 *   0.40000E-01   0.18347E+00   0.30167E+00
*  573 *  -0.40000E-01   0.00000E+00  -0.35458E+00
*  574 *   0.40000E-01   0.00000E+00  -0.35458E+00
*  575 *  -0.40000E-01   0.35458E+00   0.00000E+00
*  576 *   0.40000E-01   0.35458E+00   0.00000E+00
*  577 *  -0.40000E-01  -0.35458E+00   0.00000E+00
*  578 *   0.40000E-01  -0.35458E+00   0.00000E+00
*  579 *  -0.40000E-01   0.00000E+00   0.35458E+00
*  580 *   0.40000E-01   0.00000E+00   0.35458E+00
*  581 *  -0.40000E-01   0.25073E+00  -0.25073E+00
*  582 *   0.40000E-01   0.25073E+00  -0.25073E+00
*  583 *  -0.40000E-01  -0.25073E+00  -0.25073E+00
*  584 *   0.40000E-01  -0.25073E+00  -0.25073E+00
*  585 *  -0.40000E-01   0.25073E+00   0.25073E+00
*  586 *   0.40000E-01   0.25073E+00   0.25073E+00
*  587 *  -0.40000E-01  -0.25073E+00   0.25073E+00
*  588 *   0.40000E-01  -0.25073E+00   0.25073E+00
*  589 *  -0.28109E+00   0.15796E+00  -0.15796E+00
*  590 *   0.28109E+00   0.15796E+00  -0.15796E+00
*  591 *  -0.28109E+00  -0.15796E+00  -0.15796E+00
*  592 *   0.28109E+00  -0.15796E+00  -0.15796E+00
*  593 *  -0.28109E+00   0.15796E+00   0.15796E+00
*  594 *   0.28109E+00   0.15796E+00   0.15796E+00
```

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```
*  595 * -0.28109E+00 -0.15796E+00  0.15796E+00
*  596 *  0.28109E+00 -0.15796E+00  0.15796E+00
*  597 * -0.30408E+00  0.00000E+00 -0.19333E+00
*  598 *  0.30408E+00  0.00000E+00 -0.19333E+00
*  599 * -0.30408E+00  0.19333E+00  0.00000E+00
*  600 *  0.30408E+00  0.19333E+00  0.00000E+00
*  601 * -0.30408E+00 -0.19333E+00  0.00000E+00
*  602 *  0.30408E+00 -0.19333E+00  0.00000E+00
*  603 * -0.30408E+00  0.00000E+00  0.19333E+00
*  604 *  0.30408E+00  0.00000E+00  0.19333E+00
*  605 * -0.28109E+00  0.87141E-01 -0.21246E+00
*  606 *  0.28109E+00  0.87141E-01 -0.21246E+00
*  607 * -0.28109E+00 -0.87141E-01 -0.21246E+00
*  608 *  0.28109E+00 -0.87141E-01 -0.21246E+00
*  609 * -0.28109E+00  0.21246E+00 -0.87141E-01
*  610 *  0.28109E+00  0.21246E+00 -0.87141E-01
*  611 * -0.28109E+00 -0.21246E+00 -0.87141E-01
*  612 *  0.28109E+00 -0.21246E+00 -0.87141E-01
*  613 * -0.28109E+00  0.21246E+00  0.87141E-01
*  614 *  0.28109E+00  0.21246E+00  0.87141E-01
*  615 * -0.28109E+00 -0.21246E+00  0.87141E-01
*  616 *  0.28109E+00 -0.21246E+00  0.87141E-01
*  617 * -0.28109E+00  0.87141E-01  0.21246E+00
*  618 *  0.28109E+00  0.87141E-01  0.21246E+00
*  619 * -0.28109E+00 -0.87141E-01  0.21246E+00
*  620 *  0.28109E+00 -0.87141E-01  0.21246E+00
*  621 * -0.12848E+00  0.18347E+00 -0.30167E+00
*  622 *  0.12848E+00  0.18347E+00 -0.30167E+00
*  623 * -0.12848E+00 -0.30167E+00 -0.18347E+00
*  624 *  0.12848E+00 -0.30167E+00 -0.18347E+00
*  625 * -0.12848E+00  0.30167E+00  0.18347E+00
*  626 *  0.12848E+00  0.30167E+00  0.18347E+00
*  627 * -0.12848E+00 -0.18347E+00  0.30167E+00
*  628 *  0.12848E+00 -0.18347E+00  0.30167E+00
*  629 * -0.12848E+00 -0.18347E+00 -0.30167E+00
*  630 *  0.12848E+00 -0.18347E+00 -0.30167E+00
*  631 * -0.12848E+00  0.30167E+00 -0.18347E+00
*  632 *  0.12848E+00  0.30167E+00 -0.18347E+00
*  633 * -0.12848E+00 -0.30167E+00  0.18347E+00
*  634 *  0.12848E+00 -0.30167E+00  0.18347E+00
*  635 * -0.12848E+00  0.18347E+00  0.30167E+00
*  636 *  0.12848E+00  0.18347E+00  0.30167E+00
*  637 * -0.28109E+00  0.00000E+00 -0.25064E+00
*  638 *  0.28109E+00  0.00000E+00 -0.25064E+00
*  639 * -0.28109E+00  0.25064E+00  0.00000E+00
*  640 *  0.28109E+00  0.25064E+00  0.00000E+00
*  641 * -0.28109E+00 -0.25064E+00  0.00000E+00
*  642 *  0.28109E+00 -0.25064E+00  0.00000E+00
*  643 * -0.28109E+00  0.00000E+00  0.25064E+00
*  644 *  0.28109E+00  0.00000E+00  0.25064E+00
*  645 * -0.12848E+00  0.00000E+00 -0.35458E+00
*  646 *  0.12848E+00  0.00000E+00 -0.35458E+00
*  647 * -0.12848E+00  0.35458E+00  0.00000E+00
*  648 *  0.12848E+00  0.35458E+00  0.00000E+00
*  649 * -0.12848E+00 -0.35458E+00  0.00000E+00
*  650 *  0.12848E+00 -0.35458E+00  0.00000E+00
*  651 * -0.12848E+00  0.00000E+00  0.35458E+00
*  652 *  0.12848E+00  0.00000E+00  0.35458E+00
*  653 * -0.40000E-01  0.19497E+00 -0.32056E+00
*  654 *  0.40000E-01  0.19497E+00 -0.32056E+00
*  655 * -0.40000E-01 -0.19497E+00 -0.32056E+00
*  656 *  0.40000E-01 -0.19497E+00 -0.32056E+00
*  657 * -0.40000E-01 -0.32056E+00 -0.19497E+00
*  658 *  0.40000E-01 -0.32056E+00 -0.19497E+00
*  659 * -0.40000E-01  0.32056E+00 -0.19497E+00
*  660 *  0.40000E-01  0.32056E+00 -0.19497E+00
*  661 * -0.40000E-01 -0.32056E+00  0.19497E+00
*  662 *  0.40000E-01 -0.32056E+00  0.19497E+00
*  663 * -0.40000E-01  0.32056E+00  0.19497E+00
```

```
*   664 *   0.40000E-01   0.32056E+00   0.19497E+00
*   665 *  -0.40000E-01   0.19497E+00   0.32056E+00
*   666 *   0.40000E-01   0.19497E+00   0.32056E+00
*   667 *  -0.40000E-01  -0.19497E+00   0.32056E+00
*   668 *   0.40000E-01  -0.19497E+00   0.32056E+00
*   669 *  -0.40000E-01   0.00000E+00  -0.37679E+00
*   670 *   0.40000E-01   0.00000E+00  -0.37679E+00
*   671 *  -0.40000E-01   0.37679E+00   0.00000E+00
*   672 *   0.40000E-01   0.37679E+00   0.00000E+00
*   673 *  -0.40000E-01  -0.37679E+00   0.00000E+00
*   674 *   0.40000E-01  -0.37679E+00   0.00000E+00
*   675 *  -0.40000E-01   0.00000E+00   0.37679E+00
*   676 *   0.40000E-01   0.00000E+00   0.37679E+00
*   677 *  -0.25205E+00   0.17072E+00  -0.23160E+00
*   678 *   0.25205E+00   0.17072E+00  -0.23160E+00
*   679 *  -0.25205E+00  -0.17072E+00  -0.23160E+00
*   680 *   0.25205E+00  -0.17072E+00  -0.23160E+00
*   681 *  -0.25205E+00   0.23160E+00  -0.17072E+00
*   682 *   0.25205E+00   0.23160E+00  -0.17072E+00
*   683 *  -0.25205E+00  -0.23160E+00  -0.17072E+00
*   684 *   0.25205E+00  -0.23160E+00  -0.17072E+00
*   685 *  -0.25205E+00   0.23160E+00   0.17072E+00
*   686 *   0.25205E+00   0.23160E+00   0.17072E+00
*   687 *  -0.25205E+00  -0.23160E+00   0.17072E+00
*   688 *   0.25205E+00  -0.23160E+00   0.17072E+00
*   689 *  -0.25205E+00   0.17072E+00   0.23160E+00
*   690 *   0.25205E+00   0.17072E+00   0.23160E+00
*   691 *  -0.25205E+00  -0.17072E+00   0.23160E+00
*   692 *   0.25205E+00  -0.17072E+00   0.23160E+00
*   693 *  -0.25205E+00   0.93519E-01  -0.27616E+00
*   694 *   0.25205E+00   0.93519E-01  -0.27616E+00
*   695 *  -0.25205E+00  -0.93519E-01  -0.27616E+00
*   696 *   0.25205E+00  -0.93519E-01  -0.27616E+00
*   697 *  -0.25205E+00   0.93519E-01   0.27616E+00
*   698 *   0.25205E+00   0.93519E-01   0.27616E+00
*   699 *  -0.25205E+00  -0.93519E-01   0.27616E+00
*   700 *   0.25205E+00  -0.93519E-01   0.27616E+00
*   701 *  -0.25205E+00   0.27616E+00  -0.93519E-01
*   702 *   0.25205E+00   0.27616E+00  -0.93519E-01
*   703 *  -0.25205E+00  -0.27616E+00  -0.93519E-01
*   704 *   0.25205E+00  -0.27616E+00  -0.93519E-01
*   705 *  -0.25205E+00   0.27616E+00   0.93519E-01
*   706 *   0.25205E+00   0.27616E+00   0.93519E-01
*   707 *  -0.25205E+00  -0.27616E+00   0.93519E-01
*   708 *   0.25205E+00  -0.27616E+00   0.93519E-01
*   709 *  -0.25205E+00   0.00000E+00  -0.30439E+00
*   710 *   0.25205E+00   0.00000E+00  -0.30439E+00
*   711 *  -0.25205E+00   0.30439E+00   0.00000E+00
*   712 *   0.25205E+00   0.30439E+00   0.00000E+00
*   713 *  -0.25205E+00  -0.30439E+00   0.00000E+00
*   714 *   0.25205E+00  -0.30439E+00   0.00000E+00
*   715 *  -0.25205E+00   0.00000E+00   0.30439E+00
*   716 *   0.25205E+00   0.00000E+00   0.30439E+00
*   717 *  -0.40000E-01   0.11241E+00  -0.37841E+00
*   718 *   0.40000E-01   0.11241E+00  -0.37841E+00
*   719 *  -0.40000E-01  -0.11241E+00  -0.37841E+00
*   720 *   0.40000E-01  -0.11241E+00  -0.37841E+00
*   721 *  -0.40000E-01   0.37841E+00  -0.11241E+00
*   722 *   0.40000E-01   0.37841E+00  -0.11241E+00
*   723 *  -0.40000E-01  -0.37841E+00  -0.11241E+00
*   724 *   0.40000E-01  -0.37841E+00  -0.11241E+00
*   725 *  -0.40000E-01   0.37841E+00   0.11241E+00
*   726 *   0.40000E-01   0.37841E+00   0.11241E+00
*   727 *  -0.40000E-01  -0.37841E+00   0.11241E+00
*   728 *   0.40000E-01  -0.37841E+00   0.11241E+00
*   729 *  -0.40000E-01   0.11241E+00   0.37841E+00
*   730 *   0.40000E-01   0.11241E+00   0.37841E+00
*   731 *  -0.40000E-01  -0.11241E+00   0.37841E+00
*   732 *   0.40000E-01  -0.11241E+00   0.37841E+00
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*   733 *    0.00000E+00    0.20646E+00  -0.33946E+00
*   734 *    0.00000E+00  -0.33946E+00  -0.20646E+00
*   735 *    0.00000E+00    0.33946E+00    0.20646E+00
*   736 *    0.00000E+00  -0.20646E+00    0.33946E+00
*   737 *    0.00000E+00  -0.20646E+00  -0.33946E+00
*   738 *    0.00000E+00    0.33946E+00  -0.20646E+00
*   739 *    0.00000E+00  -0.33946E+00    0.20646E+00
*   740 *    0.00000E+00    0.20646E+00    0.33946E+00
*   741 *    0.00000E+00    0.00000E+00  -0.39900E+00
*   742 *    0.00000E+00    0.39900E+00    0.00000E+00
*   743 *    0.00000E+00  -0.39900E+00    0.00000E+00
*   744 *    0.00000E+00    0.00000E+00    0.39900E+00
*   745 * -0.40000E-01    0.20646E+00  -0.33946E+00
*   746 *   0.40000E-01    0.20646E+00  -0.33946E+00
*   747 * -0.40000E-01  -0.20646E+00  -0.33946E+00
*   748 *   0.40000E-01  -0.20646E+00  -0.33946E+00
*   749 * -0.40000E-01  -0.33946E+00  -0.20646E+00
*   750 *   0.40000E-01  -0.33946E+00  -0.20646E+00
*   751 * -0.40000E-01    0.33946E+00  -0.20646E+00
*   752 *   0.40000E-01    0.33946E+00  -0.20646E+00
*   753 * -0.40000E-01  -0.33946E+00    0.20646E+00
*   754 *   0.40000E-01  -0.33946E+00    0.20646E+00
*   755 * -0.40000E-01    0.33946E+00    0.20646E+00
*   756 *   0.40000E-01    0.33946E+00    0.20646E+00
*   757 * -0.40000E-01    0.20646E+00    0.33946E+00
*   758 *   0.40000E-01    0.20646E+00    0.33946E+00
*   759 * -0.40000E-01  -0.20646E+00    0.33946E+00
*   760 *   0.40000E-01  -0.20646E+00    0.33946E+00
*   761 * -0.40000E-01    0.00000E+00  -0.39900E+00
*   762 *   0.40000E-01    0.00000E+00  -0.39900E+00
*   763 * -0.40000E-01    0.39900E+00    0.00000E+00
*   764 *   0.40000E-01    0.39900E+00    0.00000E+00
*   765 * -0.40000E-01  -0.39900E+00    0.00000E+00
*   766 *   0.40000E-01  -0.39900E+00    0.00000E+00
*   767 * -0.40000E-01    0.00000E+00    0.39900E+00
*   768 *   0.40000E-01    0.00000E+00    0.39900E+00
*   769 * -0.40000E-01    0.28214E+00  -0.28214E+00
*   770 *   0.40000E-01    0.28214E+00  -0.28214E+00
*   771 * -0.40000E-01  -0.28214E+00  -0.28214E+00
*   772 *   0.40000E-01  -0.28214E+00  -0.28214E+00
*   773 * -0.40000E-01    0.28214E+00    0.28214E+00
*   774 *   0.40000E-01    0.28214E+00    0.28214E+00
*   775 * -0.40000E-01  -0.28214E+00    0.28214E+00
*   776 *   0.40000E-01  -0.28214E+00    0.28214E+00
*   777 * -0.21696E+00    0.99897E-01  -0.33628E+00
*   778 *   0.21696E+00    0.99897E-01  -0.33628E+00
*   779 * -0.21696E+00  -0.99897E-01  -0.33628E+00
*   780 *   0.21696E+00  -0.99897E-01  -0.33628E+00
*   781 * -0.21696E+00    0.33628E+00  -0.99897E-01
*   782 *   0.21696E+00    0.33628E+00  -0.99897E-01
*   783 * -0.21696E+00  -0.33628E+00  -0.99897E-01
*   784 *   0.21696E+00  -0.33628E+00  -0.99897E-01
*   785 * -0.21696E+00    0.33628E+00    0.99897E-01
*   786 *   0.21696E+00    0.33628E+00    0.99897E-01
*   787 * -0.21696E+00  -0.33628E+00    0.99897E-01
*   788 *   0.21696E+00  -0.33628E+00    0.99897E-01
*   789 * -0.21696E+00    0.99897E-01    0.33628E+00
*   790 *   0.21696E+00    0.99897E-01    0.33628E+00
*   791 * -0.21696E+00  -0.99897E-01    0.33628E+00
*   792 *   0.21696E+00  -0.99897E-01    0.33628E+00
*   793 * -0.21696E+00    0.18347E+00  -0.30167E+00
*   794 *   0.21696E+00    0.18347E+00  -0.30167E+00
*   795 * -0.21696E+00  -0.30167E+00  -0.18347E+00
*   796 *   0.21696E+00  -0.30167E+00  -0.18347E+00
*   797 * -0.21696E+00    0.30167E+00    0.18347E+00
*   798 *   0.21696E+00    0.30167E+00    0.18347E+00
*   799 * -0.21696E+00  -0.18347E+00    0.30167E+00
*   800 *   0.21696E+00  -0.18347E+00    0.30167E+00
*   801 * -0.21696E+00  -0.18347E+00  -0.30167E+00
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```
*  802 *   0.21696E+00  -0.18347E+00  -0.30167E+00
*  803 *  -0.21696E+00   0.30167E+00  -0.18347E+00
*  804 *   0.21696E+00   0.30167E+00  -0.18347E+00
*  805 *  -0.21696E+00  -0.30167E+00   0.18347E+00
*  806 *   0.21696E+00  -0.30167E+00   0.18347E+00
*  807 *  -0.21696E+00   0.18347E+00   0.30167E+00
*  808 *   0.21696E+00   0.18347E+00   0.30167E+00
*  809 *  -0.21696E+00   0.00000E+00  -0.35458E+00
*  810 *   0.21696E+00   0.00000E+00  -0.35458E+00
*  811 *  -0.21696E+00   0.35458E+00   0.00000E+00
*  812 *   0.21696E+00   0.35458E+00   0.00000E+00
*  813 *  -0.21696E+00  -0.35458E+00   0.00000E+00
*  814 *   0.21696E+00  -0.35458E+00   0.00000E+00
*  815 *  -0.21696E+00   0.00000E+00   0.35458E+00
*  816 *   0.21696E+00   0.00000E+00   0.35458E+00
*  817 *  -0.21696E+00   0.25073E+00  -0.25073E+00
*  818 *   0.21696E+00   0.25073E+00  -0.25073E+00
*  819 *  -0.21696E+00  -0.25073E+00  -0.25073E+00
*  820 *   0.21696E+00  -0.25073E+00  -0.25073E+00
*  821 *  -0.21696E+00   0.25073E+00   0.25073E+00
*  822 *   0.21696E+00   0.25073E+00   0.25073E+00
*  823 *  -0.21696E+00  -0.25073E+00   0.25073E+00
*  824 *   0.21696E+00  -0.25073E+00   0.25073E+00
*  825 *  -0.43337E+00   0.00000E+00   0.00000E+00
*  826 *   0.43337E+00   0.00000E+00   0.00000E+00
*  827 *  -0.37419E+00   0.15796E+00  -0.15796E+00
*  828 *   0.37419E+00   0.15796E+00  -0.15796E+00
*  829 *  -0.37419E+00  -0.15796E+00  -0.15796E+00
*  830 *   0.37419E+00  -0.15796E+00  -0.15796E+00
*  831 *  -0.37419E+00   0.15796E+00   0.15796E+00
*  832 *   0.37419E+00   0.15796E+00   0.15796E+00
*  833 *  -0.37419E+00  -0.15796E+00   0.15796E+00
*  834 *   0.37419E+00  -0.15796E+00   0.15796E+00
*  835 *  -0.41684E+00   0.00000E+00  -0.13245E+00
*  836 *   0.41684E+00   0.00000E+00  -0.13245E+00
*  837 *  -0.41684E+00   0.13245E+00   0.00000E+00
*  838 *   0.41684E+00   0.13245E+00   0.00000E+00
*  839 *  -0.41684E+00  -0.13245E+00   0.00000E+00
*  840 *   0.41684E+00  -0.13245E+00   0.00000E+00
*  841 *  -0.41684E+00   0.00000E+00   0.13245E+00
*  842 *   0.41684E+00   0.00000E+00   0.13245E+00
*  843 *  -0.37419E+00   0.00000E+00  -0.25064E+00
*  844 *   0.37419E+00   0.00000E+00  -0.25064E+00
*  845 *  -0.37419E+00   0.25064E+00   0.00000E+00
*  846 *   0.37419E+00   0.25064E+00   0.00000E+00
*  847 *  -0.37419E+00  -0.25064E+00   0.00000E+00
*  848 *   0.37419E+00  -0.25064E+00   0.00000E+00
*  849 *  -0.37419E+00   0.00000E+00   0.25064E+00
*  850 *   0.37419E+00   0.00000E+00   0.25064E+00
*  851 *  -0.12848E+00  -0.22833E+00  -0.37543E+00
*  852 *   0.12848E+00  -0.22833E+00  -0.37543E+00
*  853 *  -0.12848E+00   0.22833E+00  -0.37543E+00
*  854 *   0.12848E+00   0.22833E+00  -0.37543E+00
*  855 *  -0.12848E+00  -0.37543E+00  -0.22833E+00
*  856 *   0.12848E+00  -0.37543E+00  -0.22833E+00
*  857 *  -0.12848E+00   0.37543E+00   0.22833E+00
*  858 *   0.12848E+00   0.37543E+00   0.22833E+00
*  859 *  -0.12848E+00  -0.22833E+00   0.37543E+00
*  860 *   0.12848E+00  -0.22833E+00   0.37543E+00
*  861 *  -0.12848E+00   0.22833E+00   0.37543E+00
*  862 *   0.12848E+00   0.22833E+00   0.37543E+00
*  863 *  -0.12848E+00   0.37543E+00  -0.22833E+00
*  864 *   0.12848E+00   0.37543E+00  -0.22833E+00
*  865 *  -0.12848E+00  -0.37543E+00   0.22833E+00
*  866 *   0.12848E+00  -0.37543E+00   0.22833E+00
*  867 *  -0.12848E+00   0.00000E+00  -0.44128E+00
*  868 *   0.12848E+00   0.00000E+00  -0.44128E+00
*  869 *  -0.12848E+00   0.44128E+00   0.00000E+00
*  870 *   0.12848E+00   0.44128E+00   0.00000E+00
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*  871 *  -0.12848E+00  -0.44128E+00   0.00000E+00
*  872 *   0.12848E+00  -0.44128E+00   0.00000E+00
*  873 *  -0.12848E+00   0.00000E+00   0.44128E+00
*  874 *   0.12848E+00   0.00000E+00   0.44128E+00
*  875 *   0.40000E-01  -0.23996E+00  -0.39454E+00
*  876 *  -0.40000E-01  -0.23996E+00  -0.39454E+00
*  877 *   0.40000E-01   0.23996E+00  -0.39454E+00
*  878 *  -0.40000E-01   0.23996E+00  -0.39454E+00
*  879 *   0.40000E-01   0.39454E+00  -0.23996E+00
*  880 *  -0.40000E-01   0.39454E+00  -0.23996E+00
*  881 *   0.40000E-01  -0.39454E+00  -0.23996E+00
*  882 *  -0.40000E-01  -0.39454E+00  -0.23996E+00
*  883 *   0.40000E-01   0.39454E+00   0.23996E+00
*  884 *  -0.40000E-01   0.39454E+00   0.23996E+00
*  885 *   0.40000E-01  -0.39454E+00   0.23996E+00
*  886 *  -0.40000E-01  -0.39454E+00   0.23996E+00
*  887 *   0.40000E-01  -0.23996E+00   0.39454E+00
*  888 *  -0.40000E-01  -0.23996E+00   0.39454E+00
*  889 *   0.40000E-01   0.23996E+00   0.39454E+00
*  890 *  -0.40000E-01   0.23996E+00   0.39454E+00
*  891 *  -0.40000E-01   0.00000E+00  -0.46375E+00
*  892 *   0.40000E-01   0.00000E+00  -0.46375E+00
*  893 *  -0.40000E-01   0.46375E+00   0.00000E+00
*  894 *   0.40000E-01   0.46375E+00   0.00000E+00
*  895 *  -0.40000E-01  -0.46375E+00   0.00000E+00
*  896 *   0.40000E-01  -0.46375E+00   0.00000E+00
*  897 *  -0.40000E-01   0.00000E+00   0.46375E+00
*  898 *   0.40000E-01   0.00000E+00   0.46375E+00
*  899 *  -0.30544E+00   0.18347E+00  -0.30167E+00
*  900 *   0.30544E+00   0.18347E+00  -0.30167E+00
*  901 *  -0.30544E+00  -0.18347E+00  -0.30167E+00
*  902 *   0.30544E+00  -0.18347E+00  -0.30167E+00
*  903 *  -0.30544E+00  -0.30167E+00  -0.18347E+00
*  904 *   0.30544E+00  -0.30167E+00  -0.18347E+00
*  905 *  -0.30544E+00   0.30167E+00  -0.18347E+00
*  906 *   0.30544E+00   0.30167E+00  -0.18347E+00
*  907 *  -0.30544E+00   0.30167E+00   0.18347E+00
*  908 *   0.30544E+00   0.30167E+00   0.18347E+00
*  909 *  -0.30544E+00  -0.30167E+00   0.18347E+00
*  910 *   0.30544E+00  -0.30167E+00   0.18347E+00
*  911 *  -0.30544E+00   0.18347E+00   0.30167E+00
*  912 *   0.30544E+00   0.18347E+00   0.30167E+00
*  913 *  -0.30544E+00  -0.18347E+00   0.30167E+00
*  914 *   0.30544E+00  -0.18347E+00   0.30167E+00
*  915 *  -0.30544E+00   0.00000E+00  -0.35458E+00
*  916 *   0.30544E+00   0.00000E+00  -0.35458E+00
*  917 *  -0.30544E+00   0.35458E+00   0.00000E+00
*  918 *   0.30544E+00   0.35458E+00   0.00000E+00
*  919 *  -0.30544E+00  -0.35458E+00   0.00000E+00
*  920 *   0.30544E+00  -0.35458E+00   0.00000E+00
*  921 *  -0.30544E+00   0.00000E+00   0.35458E+00
*  922 *   0.30544E+00   0.00000E+00   0.35458E+00
*  923 *  -0.21696E+00   0.21684E+00  -0.35653E+00
*  924 *   0.21696E+00   0.21684E+00  -0.35653E+00
*  925 *  -0.21696E+00  -0.21684E+00  -0.35653E+00
*  926 *   0.21696E+00  -0.21684E+00  -0.35653E+00
*  927 *  -0.21696E+00  -0.35653E+00  -0.21684E+00
*  928 *   0.21696E+00  -0.35653E+00  -0.21684E+00
*  929 *  -0.21696E+00   0.35653E+00  -0.21684E+00
*  930 *   0.21696E+00   0.35653E+00  -0.21684E+00
*  931 *  -0.21696E+00  -0.35653E+00   0.21684E+00
*  932 *   0.21696E+00  -0.35653E+00   0.21684E+00
*  933 *  -0.21696E+00   0.35653E+00   0.21684E+00
*  934 *   0.21696E+00   0.35653E+00   0.21684E+00
*  935 *  -0.21696E+00   0.21684E+00   0.35653E+00
*  936 *   0.21696E+00   0.21684E+00   0.35653E+00
*  937 *  -0.21696E+00  -0.21684E+00   0.35653E+00
*  938 *   0.21696E+00  -0.21684E+00   0.35653E+00
*  939 *  -0.21696E+00   0.00000E+00  -0.41907E+00
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*  940  *   0.21696E+00   0.00000E+00  -0.41907E+00
*  941  *  -0.21696E+00   0.41907E+00   0.00000E+00
*  942  *   0.21696E+00   0.41907E+00   0.00000E+00
*  943  *  -0.21696E+00  -0.41907E+00   0.00000E+00
*  944  *   0.21696E+00  -0.41907E+00   0.00000E+00
*  945  *  -0.21696E+00   0.00000E+00   0.41907E+00
*  946  *   0.21696E+00   0.00000E+00   0.41907E+00
*  947  *  -0.46730E+00   0.15796E+00  -0.15796E+00
*  948  *   0.46730E+00   0.15796E+00  -0.15796E+00
*  949  *  -0.46730E+00  -0.15796E+00  -0.15796E+00
*  950  *   0.46730E+00  -0.15796E+00  -0.15796E+00
*  951  *  -0.46730E+00   0.15796E+00   0.15796E+00
*  952  *   0.46730E+00   0.15796E+00   0.15796E+00
*  953  *  -0.46730E+00  -0.15796E+00   0.15796E+00
*  954  *   0.46730E+00  -0.15796E+00   0.15796E+00
*  955  *  -0.46730E+00   0.87141E-01  -0.21246E+00
*  956  *   0.46730E+00   0.87141E-01  -0.21246E+00
*  957  *  -0.46730E+00  -0.87141E-01  -0.21246E+00
*  958  *   0.46730E+00  -0.87141E-01  -0.21246E+00
*  959  *  -0.46730E+00   0.21246E+00  -0.87141E-01
*  960  *   0.46730E+00   0.21246E+00  -0.87141E-01
*  961  *  -0.46730E+00  -0.21246E+00  -0.87141E-01
*  962  *   0.46730E+00  -0.21246E+00  -0.87141E-01
*  963  *  -0.46730E+00   0.21246E+00   0.87141E-01
*  964  *   0.46730E+00   0.21246E+00   0.87141E-01
*  965  *  -0.46730E+00  -0.21246E+00   0.87141E-01
*  966  *   0.46730E+00  -0.21246E+00   0.87141E-01
*  967  *  -0.46730E+00   0.87141E-01   0.21246E+00
*  968  *   0.46730E+00   0.87141E-01   0.21246E+00
*  969  *  -0.46730E+00  -0.87141E-01   0.21246E+00
*  970  *   0.46730E+00  -0.87141E-01   0.21246E+00
*  971  *  -0.49348E+00   0.80763E-01  -0.14521E+00
*  972  *   0.49348E+00   0.80763E-01  -0.14521E+00
*  973  *  -0.49348E+00  -0.80763E-01  -0.14521E+00
*  974  *   0.49348E+00  -0.80763E-01  -0.14521E+00
*  975  *  -0.49348E+00   0.14521E+00  -0.80763E-01
*  976  *   0.49348E+00   0.14521E+00  -0.80763E-01
*  977  *  -0.49348E+00  -0.14521E+00  -0.80763E-01
*  978  *   0.49348E+00  -0.14521E+00  -0.80763E-01
*  979  *  -0.49348E+00   0.14521E+00   0.80763E-01
*  980  *   0.49348E+00   0.14521E+00   0.80763E-01
*  981  *  -0.49348E+00  -0.14521E+00   0.80763E-01
*  982  *   0.49348E+00  -0.14521E+00   0.80763E-01
*  983  *  -0.49348E+00   0.80763E-01   0.14521E+00
*  984  *   0.49348E+00   0.80763E-01   0.14521E+00
*  985  *  -0.49348E+00  -0.80763E-01   0.14521E+00
*  986  *   0.49348E+00  -0.80763E-01   0.14521E+00
*  987  *  -0.43411E+00   0.17072E+00  -0.23160E+00
*  988  *   0.43411E+00   0.17072E+00  -0.23160E+00
*  989  *  -0.43411E+00  -0.17072E+00  -0.23160E+00
*  990  *   0.43411E+00  -0.17072E+00  -0.23160E+00
*  991  *  -0.43411E+00   0.23160E+00  -0.17072E+00
*  992  *   0.43411E+00   0.23160E+00  -0.17072E+00
*  993  *  -0.43411E+00  -0.23160E+00  -0.17072E+00
*  994  *   0.43411E+00  -0.23160E+00  -0.17072E+00
*  995  *  -0.43411E+00   0.23160E+00   0.17072E+00
*  996  *   0.43411E+00   0.23160E+00   0.17072E+00
*  997  *  -0.43411E+00  -0.23160E+00   0.17072E+00
*  998  *   0.43411E+00  -0.23160E+00   0.17072E+00
*  999  *  -0.43411E+00   0.17072E+00   0.23160E+00
* 1000  *   0.43411E+00   0.17072E+00   0.23160E+00
* 1001  *  -0.43411E+00  -0.17072E+00   0.23160E+00
* 1002  *   0.43411E+00  -0.17072E+00   0.23160E+00
* 1003  *  -0.43411E+00   0.93519E-01  -0.27616E+00
* 1004  *   0.43411E+00   0.93519E-01  -0.27616E+00
* 1005  *  -0.43411E+00  -0.93519E-01  -0.27616E+00
* 1006  *   0.43411E+00  -0.93519E-01  -0.27616E+00
* 1007  *  -0.43411E+00   0.27616E+00  -0.93519E-01
* 1008  *   0.43411E+00   0.27616E+00  -0.93519E-01
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* 1009 *  -0.43411E+00  -0.27616E+00  -0.93519E-01
* 1010 *   0.43411E+00  -0.27616E+00  -0.93519E-01
* 1011 *  -0.43411E+00   0.27616E+00   0.93519E-01
* 1012 *   0.43411E+00   0.27616E+00   0.93519E-01
* 1013 *  -0.43411E+00  -0.27616E+00   0.93519E-01
* 1014 *   0.43411E+00  -0.27616E+00   0.93519E-01
* 1015 *  -0.43411E+00   0.93519E-01   0.27616E+00
* 1016 *   0.43411E+00   0.93519E-01   0.27616E+00
* 1017 *  -0.43411E+00  -0.93519E-01   0.27616E+00
* 1018 *   0.43411E+00  -0.93519E-01   0.27616E+00
* 1019 *  -0.51266E+00   0.74386E-01  -0.74386E-01
* 1020 *   0.51266E+00   0.74386E-01  -0.74386E-01
* 1021 *  -0.51266E+00  -0.74386E-01  -0.74386E-01
* 1022 *   0.51266E+00  -0.74386E-01  -0.74386E-01
* 1023 *  -0.51266E+00   0.74386E-01   0.74386E-01
* 1024 *   0.51266E+00   0.74386E-01   0.74386E-01
* 1025 *  -0.51266E+00  -0.74386E-01   0.74386E-01
* 1026 *   0.51266E+00  -0.74386E-01   0.74386E-01
* 1027 *  -0.40000E-01   0.14889E+00  -0.50122E+00
* 1028 *   0.40000E-01   0.14889E+00  -0.50122E+00
* 1029 *  -0.40000E-01  -0.50122E+00  -0.14889E+00
* 1030 *   0.40000E-01  -0.50122E+00  -0.14889E+00
* 1031 *  -0.40000E-01   0.50122E+00   0.14889E+00
* 1032 *   0.40000E-01   0.50122E+00   0.14889E+00
* 1033 *  -0.40000E-01  -0.14889E+00   0.50122E+00
* 1034 *   0.40000E-01  -0.14889E+00   0.50122E+00
* 1035 *  -0.40000E-01  -0.14889E+00  -0.50122E+00
* 1036 *   0.40000E-01  -0.14889E+00  -0.50122E+00
* 1037 *   0.40000E-01   0.50122E+00  -0.14889E+00
* 1038 *  -0.40000E-01   0.50122E+00  -0.14889E+00
* 1039 *  -0.40000E-01  -0.50122E+00   0.14889E+00
* 1040 *   0.40000E-01  -0.50122E+00   0.14889E+00
* 1041 *  -0.40000E-01   0.14889E+00   0.50122E+00
* 1042 *   0.40000E-01   0.14889E+00   0.50122E+00
* 1043 *  -0.21696E+00  -0.13623E+00  -0.45861E+00
* 1044 *   0.21696E+00  -0.13623E+00  -0.45861E+00
* 1045 *  -0.21696E+00   0.45861E+00  -0.13623E+00
* 1046 *   0.21696E+00   0.45861E+00  -0.13623E+00
* 1047 *  -0.21696E+00  -0.45861E+00   0.13623E+00
* 1048 *   0.21696E+00  -0.45861E+00   0.13623E+00
* 1049 *  -0.21696E+00   0.13623E+00   0.45861E+00
* 1050 *   0.21696E+00   0.13623E+00   0.45861E+00
* 1051 *  -0.21696E+00   0.13623E+00  -0.45861E+00
* 1052 *   0.21696E+00   0.13623E+00  -0.45861E+00
* 1053 *  -0.21696E+00  -0.45861E+00  -0.13623E+00
* 1054 *   0.21696E+00  -0.45861E+00  -0.13623E+00
* 1055 *  -0.21696E+00   0.45861E+00   0.13623E+00
* 1056 *   0.21696E+00   0.45861E+00   0.13623E+00
* 1057 *  -0.21696E+00  -0.13623E+00   0.45861E+00
* 1058 *   0.21696E+00  -0.13623E+00   0.45861E+00
* 1059 *  -0.30544E+00  -0.22153E+00  -0.36591E+00
* 1060 *   0.30544E+00  -0.22153E+00  -0.36591E+00
* 1061 *  -0.30544E+00   0.36591E+00  -0.22153E+00
* 1062 *   0.30544E+00   0.36591E+00  -0.22153E+00
* 1063 *  -0.30544E+00  -0.36591E+00   0.22153E+00
* 1064 *   0.30544E+00  -0.36591E+00   0.22153E+00
* 1065 *  -0.30544E+00   0.22153E+00   0.36591E+00
* 1066 *   0.30544E+00   0.22153E+00   0.36591E+00
* 1067 *  -0.30544E+00   0.22153E+00  -0.36591E+00
* 1068 *   0.30544E+00   0.22153E+00  -0.36591E+00
* 1069 *  -0.30544E+00  -0.36591E+00  -0.22153E+00
* 1070 *   0.30544E+00  -0.36591E+00  -0.22153E+00
* 1071 *  -0.30544E+00   0.36591E+00   0.22153E+00
* 1072 *   0.30544E+00   0.36591E+00   0.22153E+00
* 1073 *  -0.30544E+00  -0.22153E+00   0.36591E+00
* 1074 *   0.30544E+00  -0.22153E+00   0.36591E+00
* 1075 *  -0.12848E+00   0.26455E+00  -0.43595E+00
* 1076 *   0.12848E+00   0.26455E+00  -0.43595E+00
* 1077 *  -0.12848E+00  -0.26455E+00  -0.43595E+00
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```
* 1078 *   0.12848E+00 -0.26455E+00 -0.43595E+00
* 1079 * -0.12848E+00 -0.43595E+00 -0.26455E+00
* 1080 *   0.12848E+00 -0.43595E+00 -0.26455E+00
* 1081 * -0.12848E+00  0.43595E+00 -0.26455E+00
* 1082 *   0.12848E+00  0.43595E+00 -0.26455E+00
* 1083 * -0.12848E+00 -0.43595E+00  0.26455E+00
* 1084 *   0.12848E+00 -0.43595E+00  0.26455E+00
* 1085 * -0.12848E+00  0.43595E+00  0.26455E+00
* 1086 *   0.12848E+00  0.43595E+00  0.26455E+00
* 1087 * -0.12848E+00 -0.26455E+00  0.43595E+00
* 1088 *   0.12848E+00 -0.26455E+00  0.43595E+00
* 1089 * -0.12848E+00  0.26455E+00  0.43595E+00
* 1090 *   0.12848E+00  0.26455E+00  0.43595E+00
* 1091 *   0.00000E+00 -0.27396E+00 -0.45063E+00
* 1092 *   0.00000E+00  0.27396E+00 -0.45063E+00
* 1093 *   0.00000E+00  0.45063E+00 -0.27396E+00
* 1094 *   0.00000E+00 -0.45063E+00 -0.27396E+00
* 1095 *   0.00000E+00  0.45063E+00  0.27396E+00
* 1096 *   0.00000E+00 -0.45063E+00  0.27396E+00
* 1097 *   0.00000E+00 -0.27396E+00  0.45063E+00
* 1098 *   0.00000E+00  0.27396E+00  0.45063E+00
* 1099 * -0.39392E+00  0.99897E-01 -0.33628E+00
* 1100 *   0.39392E+00  0.99897E-01 -0.33628E+00
* 1101 * -0.39392E+00 -0.99897E-01 -0.33628E+00
* 1102 *   0.39392E+00 -0.99897E-01 -0.33628E+00
* 1103 * -0.39392E+00  0.33628E+00 -0.99897E-01
* 1104 *   0.39392E+00  0.33628E+00 -0.99897E-01
* 1105 * -0.39392E+00 -0.33628E+00 -0.99897E-01
* 1106 *   0.39392E+00 -0.33628E+00 -0.99897E-01
* 1107 * -0.39392E+00  0.33628E+00  0.99897E-01
* 1108 *   0.39392E+00  0.33628E+00  0.99897E-01
* 1109 * -0.39392E+00 -0.33628E+00  0.99897E-01
* 1110 *   0.39392E+00 -0.33628E+00  0.99897E-01
* 1111 * -0.39392E+00  0.99897E-01  0.33628E+00
* 1112 *   0.39392E+00  0.99897E-01  0.33628E+00
* 1113 * -0.39392E+00 -0.99897E-01  0.33628E+00
* 1114 *   0.39392E+00 -0.99897E-01  0.33628E+00
* 1115 * -0.40000E-01  0.27346E+00 -0.44962E+00
* 1116 *   0.40000E-01  0.27346E+00 -0.44962E+00
* 1117 * -0.40000E-01 -0.27346E+00 -0.44962E+00
* 1118 *   0.40000E-01 -0.27346E+00 -0.44962E+00
* 1119 * -0.40000E-01 -0.44962E+00 -0.27346E+00
* 1120 *   0.40000E-01 -0.44962E+00 -0.27346E+00
* 1121 * -0.40000E-01  0.44962E+00 -0.27346E+00
* 1122 *   0.40000E-01  0.44962E+00 -0.27346E+00
* 1123 * -0.40000E-01  0.44962E+00  0.27346E+00
* 1124 *   0.40000E-01  0.44962E+00  0.27346E+00
* 1125 * -0.40000E-01 -0.44962E+00  0.27346E+00
* 1126 *   0.40000E-01 -0.44962E+00  0.27346E+00
* 1127 * -0.40000E-01  0.27346E+00  0.44962E+00
* 1128 *   0.40000E-01  0.27346E+00  0.44962E+00
* 1129 * -0.40000E-01 -0.27346E+00  0.44962E+00
* 1130 *   0.40000E-01 -0.27346E+00  0.44962E+00
* 1131 * -0.21696E+00 -0.25021E+00 -0.41140E+00
* 1132 *   0.21696E+00 -0.25021E+00 -0.41140E+00
* 1133 * -0.21696E+00  0.25021E+00 -0.41140E+00
* 1134 *   0.21696E+00  0.25021E+00 -0.41140E+00
* 1135 * -0.21696E+00 -0.41140E+00 -0.25021E+00
* 1136 *   0.21696E+00 -0.41140E+00 -0.25021E+00
* 1137 * -0.21696E+00  0.41140E+00 -0.25021E+00
* 1138 *   0.21696E+00  0.41140E+00 -0.25021E+00
* 1139 * -0.21696E+00  0.41140E+00  0.25021E+00
* 1140 *   0.21696E+00  0.41140E+00  0.25021E+00
* 1141 * -0.21696E+00 -0.41140E+00  0.25021E+00
* 1142 *   0.21696E+00 -0.41140E+00  0.25021E+00
* 1143 * -0.21696E+00  0.25021E+00  0.41140E+00
* 1144 *   0.21696E+00  0.25021E+00  0.41140E+00
* 1145 * -0.21696E+00 -0.25021E+00  0.41140E+00
* 1146 *   0.21696E+00 -0.25021E+00  0.41140E+00
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```
*  1147  *  -0.39392E+00    0.18347E+00  -0.30167E+00
*  1148  *   0.39392E+00    0.18347E+00  -0.30167E+00
*  1149  *  -0.39392E+00   -0.18347E+00  -0.30167E+00
*  1150  *   0.39392E+00   -0.18347E+00  -0.30167E+00
*  1151  *  -0.39392E+00   -0.30167E+00  -0.18347E+00
*  1152  *   0.39392E+00   -0.30167E+00  -0.18347E+00
*  1153  *  -0.39392E+00    0.30167E+00  -0.18347E+00
*  1154  *   0.39392E+00    0.30167E+00  -0.18347E+00
*  1155  *  -0.39392E+00    0.30167E+00   0.18347E+00
*  1156  *   0.39392E+00    0.30167E+00   0.18347E+00
*  1157  *  -0.39392E+00   -0.30167E+00   0.18347E+00
*  1158  *   0.39392E+00   -0.30167E+00   0.18347E+00
*  1159  *  -0.39392E+00    0.18347E+00   0.30167E+00
*  1160  *   0.39392E+00    0.18347E+00   0.30167E+00
*  1161  *  -0.39392E+00   -0.18347E+00   0.30167E+00
*  1162  *   0.39392E+00   -0.18347E+00   0.30167E+00
*  1163  *  -0.52483E+00    0.00000E+00  -0.68008E-01
*  1164  *   0.52483E+00    0.00000E+00  -0.68008E-01
*  1165  *  -0.52483E+00    0.68008E-01   0.00000E+00
*  1166  *   0.52483E+00    0.68008E-01   0.00000E+00
*  1167  *  -0.52483E+00   -0.68008E-01   0.00000E+00
*  1168  *   0.52483E+00   -0.68008E-01   0.00000E+00
*  1169  *  -0.52483E+00    0.00000E+00   0.68008E-01
*  1170  *   0.52483E+00    0.00000E+00   0.68008E-01
*  1171  *  -0.51266E+00    0.00000E+00  -0.13245E+00
*  1172  *   0.51266E+00    0.00000E+00  -0.13245E+00
*  1173  *  -0.51266E+00    0.13245E+00   0.00000E+00
*  1174  *   0.51266E+00    0.13245E+00   0.00000E+00
*  1175  *  -0.51266E+00   -0.13245E+00   0.00000E+00
*  1176  *   0.51266E+00   -0.13245E+00   0.00000E+00
*  1177  *  -0.51266E+00    0.00000E+00   0.13245E+00
*  1178  *   0.51266E+00    0.00000E+00   0.13245E+00
*  1179  *  -0.12848E+00    0.00000E+00  -0.51419E+00
*  1180  *   0.12848E+00    0.00000E+00  -0.51419E+00
*  1181  *  -0.12848E+00    0.51419E+00   0.00000E+00
*  1182  *   0.12848E+00    0.51419E+00   0.00000E+00
*  1183  *  -0.12848E+00   -0.51419E+00   0.00000E+00
*  1184  *   0.12848E+00   -0.51419E+00   0.00000E+00
*  1185  *  -0.12848E+00    0.00000E+00   0.51419E+00
*  1186  *   0.12848E+00    0.00000E+00   0.51419E+00
*  1187  *  -0.49348E+00    0.00000E+00  -0.19333E+00
*  1188  *   0.49348E+00    0.00000E+00  -0.19333E+00
*  1189  *  -0.49348E+00    0.19333E+00   0.00000E+00
*  1190  *   0.49348E+00    0.19333E+00   0.00000E+00
*  1191  *  -0.49348E+00   -0.19333E+00   0.00000E+00
*  1192  *   0.49348E+00   -0.19333E+00   0.00000E+00
*  1193  *  -0.49348E+00    0.00000E+00   0.19333E+00
*  1194  *   0.49348E+00    0.00000E+00   0.19333E+00
*  1195  *   0.00000E+00    0.00000E+00  -0.53000E+00
*  1196  *  -0.39392E+00    0.00000E+00  -0.35458E+00
*  1197  *   0.39392E+00    0.00000E+00  -0.35458E+00
*  1198  *   0.00000E+00    0.53000E+00   0.00000E+00
*  1199  *  -0.39392E+00    0.35458E+00   0.00000E+00
*  1200  *   0.39392E+00    0.35458E+00   0.00000E+00
*  1201  *  -0.39392E+00   -0.35458E+00   0.00000E+00
*  1202  *   0.39392E+00   -0.35458E+00   0.00000E+00
*  1203  *   0.00000E+00   -0.53000E+00   0.00000E+00
*  1204  *  -0.53000E+00    0.00000E+00   0.00000E+00
*  1205  *   0.53000E+00    0.00000E+00   0.00000E+00
*  1206  *  -0.39392E+00    0.00000E+00   0.35458E+00
*  1207  *   0.39392E+00    0.00000E+00   0.35458E+00
*  1208  *   0.00000E+00    0.00000E+00   0.53000E+00
*  1209  *   0.40000E-01    0.00000E+00  -0.52849E+00
*  1210  *  -0.40000E-01    0.00000E+00  -0.52849E+00
*  1211  *   0.40000E-01    0.52849E+00   0.00000E+00
*  1212  *  -0.40000E-01    0.52849E+00   0.00000E+00
*  1213  *   0.40000E-01   -0.52849E+00   0.00000E+00
*  1214  *  -0.40000E-01   -0.52849E+00   0.00000E+00
*  1215  *   0.40000E-01    0.00000E+00   0.52849E+00
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* 1216 *  -0.40000E-01   0.00000E+00   0.52849E+00
* 1217 *  -0.21696E+00   0.00000E+00  -0.48356E+00
* 1218 *   0.21696E+00   0.00000E+00  -0.48356E+00
* 1219 *  -0.21696E+00   0.48356E+00   0.00000E+00
* 1220 *   0.21696E+00   0.48356E+00   0.00000E+00
* 1221 *  -0.21696E+00  -0.48356E+00   0.00000E+00
* 1222 *   0.21696E+00  -0.48356E+00   0.00000E+00
* 1223 *  -0.21696E+00   0.00000E+00   0.48356E+00
* 1224 *   0.21696E+00   0.00000E+00   0.48356E+00
* 1225 *  -0.40000E-01   0.37370E+00  -0.37370E+00
* 1226 *   0.40000E-01   0.37370E+00  -0.37370E+00
* 1227 *  -0.40000E-01  -0.37370E+00  -0.37370E+00
* 1228 *   0.40000E-01  -0.37370E+00  -0.37370E+00
* 1229 *  -0.40000E-01   0.37370E+00   0.37370E+00
* 1230 *   0.40000E-01   0.37370E+00   0.37370E+00
* 1231 *  -0.40000E-01  -0.37370E+00   0.37370E+00
* 1232 *   0.40000E-01  -0.37370E+00   0.37370E+00
* 1233 *  -0.30544E+00   0.00000E+00  -0.43314E+00
* 1234 *   0.30544E+00   0.00000E+00  -0.43314E+00
* 1235 *  -0.21696E+00   0.34193E+00  -0.34193E+00
* 1236 *   0.21696E+00   0.34193E+00  -0.34193E+00
* 1237 *  -0.21696E+00  -0.34193E+00  -0.34193E+00
* 1238 *   0.21696E+00  -0.34193E+00  -0.34193E+00
* 1239 *  -0.30544E+00   0.43314E+00   0.00000E+00
* 1240 *   0.30544E+00   0.43314E+00   0.00000E+00
* 1241 *  -0.30544E+00  -0.43314E+00   0.00000E+00
* 1242 *   0.30544E+00  -0.43314E+00   0.00000E+00
* 1243 *  -0.21696E+00   0.34193E+00   0.34193E+00
* 1244 *   0.21696E+00   0.34193E+00   0.34193E+00
* 1245 *  -0.21696E+00  -0.34193E+00   0.34193E+00
* 1246 *   0.21696E+00  -0.34193E+00   0.34193E+00
* 1247 *  -0.30544E+00   0.00000E+00   0.43314E+00
* 1248 *   0.30544E+00   0.00000E+00   0.43314E+00
* 1249 *  -0.39392E+00   0.25073E+00  -0.25073E+00
* 1250 *   0.39392E+00   0.25073E+00  -0.25073E+00
* 1251 *  -0.39392E+00  -0.25073E+00  -0.25073E+00
* 1252 *   0.39392E+00  -0.25073E+00  -0.25073E+00
* 1253 *  -0.39392E+00   0.25073E+00   0.25073E+00
* 1254 *   0.39392E+00   0.25073E+00   0.25073E+00
* 1255 *  -0.39392E+00  -0.25073E+00   0.25073E+00
* 1256 *   0.39392E+00  -0.25073E+00   0.25073E+00
* 1257 *  -0.43411E+00   0.00000E+00  -0.30439E+00
* 1258 *   0.43411E+00   0.00000E+00  -0.30439E+00
* 1259 *  -0.43411E+00   0.30439E+00   0.00000E+00
* 1260 *   0.43411E+00   0.30439E+00   0.00000E+00
* 1261 *  -0.43411E+00  -0.30439E+00   0.00000E+00
* 1262 *   0.43411E+00  -0.30439E+00   0.00000E+00
* 1263 *  -0.43411E+00   0.00000E+00   0.30439E+00
* 1264 *   0.43411E+00   0.00000E+00   0.30439E+00
* 1265 *  -0.46730E+00   0.00000E+00  -0.25064E+00
* 1266 *   0.46730E+00   0.00000E+00  -0.25064E+00
* 1267 *  -0.46730E+00   0.25064E+00   0.00000E+00
* 1268 *   0.46730E+00   0.25064E+00   0.00000E+00
* 1269 *  -0.46730E+00  -0.25064E+00   0.00000E+00
* 1270 *   0.46730E+00  -0.25064E+00   0.00000E+00
* 1271 *  -0.46730E+00   0.00000E+00   0.25064E+00
* 1272 *   0.46730E+00   0.00000E+00   0.25064E+00
* 1273 *  -0.57152E+00   0.15796E+00  -0.15796E+00
* 1274 *   0.57152E+00   0.15796E+00  -0.15796E+00
* 1275 *  -0.57152E+00  -0.15796E+00  -0.15796E+00
* 1276 *   0.57152E+00  -0.15796E+00  -0.15796E+00
* 1277 *  -0.57152E+00   0.15796E+00   0.15796E+00
* 1278 *   0.57152E+00   0.15796E+00   0.15796E+00
* 1279 *  -0.57152E+00  -0.15796E+00   0.15796E+00
* 1280 *   0.57152E+00  -0.15796E+00   0.15796E+00
* 1281 *  -0.32442E+00  -0.27415E+00  -0.45076E+00
* 1282 *   0.32442E+00  -0.27415E+00  -0.45076E+00
* 1283 *  -0.32442E+00   0.45076E+00  -0.27415E+00
* 1284 *   0.32442E+00   0.45076E+00  -0.27415E+00
```

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*  1285 *  -0.32442E+00  -0.45076E+00   0.27415E+00
*  1286 *   0.32442E+00  -0.45076E+00   0.27415E+00
*  1287 *  -0.32442E+00   0.27415E+00   0.45076E+00
*  1288 *   0.32442E+00   0.27415E+00   0.45076E+00
*  1289 *  -0.32442E+00   0.27415E+00  -0.45076E+00
*  1290 *   0.32442E+00   0.27415E+00  -0.45076E+00
*  1291 *  -0.32442E+00  -0.45076E+00  -0.27415E+00
*  1292 *   0.32442E+00  -0.45076E+00  -0.27415E+00
*  1293 *  -0.32442E+00   0.45076E+00   0.27415E+00
*  1294 *   0.32442E+00   0.45076E+00   0.27415E+00
*  1295 *  -0.32442E+00  -0.27415E+00   0.45076E+00
*  1296 *   0.32442E+00  -0.27415E+00   0.45076E+00
*  1297 *  -0.51028E+00   0.18347E+00  -0.30167E+00
*  1298 *   0.51028E+00   0.18347E+00  -0.30167E+00
*  1299 *  -0.51028E+00  -0.18347E+00  -0.30167E+00
*  1300 *   0.51028E+00  -0.18347E+00  -0.30167E+00
*  1301 *  -0.51028E+00  -0.30167E+00  -0.18347E+00
*  1302 *   0.51028E+00  -0.30167E+00  -0.18347E+00
*  1303 *  -0.51028E+00   0.30167E+00  -0.18347E+00
*  1304 *   0.51028E+00   0.30167E+00  -0.18347E+00
*  1305 *  -0.51028E+00   0.30167E+00   0.18347E+00
*  1306 *   0.51028E+00   0.30167E+00   0.18347E+00
*  1307 *  -0.51028E+00  -0.30167E+00   0.18347E+00
*  1308 *   0.51028E+00  -0.30167E+00   0.18347E+00
*  1309 *  -0.51028E+00   0.18347E+00   0.30167E+00
*  1310 *   0.51028E+00   0.18347E+00   0.30167E+00
*  1311 *  -0.51028E+00  -0.18347E+00   0.30167E+00
*  1312 *   0.51028E+00  -0.18347E+00   0.30167E+00
*  1313 *  -0.32442E+00   0.00000E+00  -0.52983E+00
*  1314 *   0.32442E+00   0.00000E+00  -0.52983E+00
*  1315 *  -0.32442E+00   0.52983E+00   0.00000E+00
*  1316 *   0.32442E+00   0.52983E+00   0.00000E+00
*  1317 *  -0.32442E+00  -0.52983E+00   0.00000E+00
*  1318 *   0.32442E+00  -0.52983E+00   0.00000E+00
*  1319 *  -0.32442E+00   0.00000E+00   0.52983E+00
*  1320 *   0.32442E+00   0.00000E+00   0.52983E+00
*  1321 *  -0.51028E+00   0.00000E+00  -0.35458E+00
*  1322 *   0.51028E+00   0.00000E+00  -0.35458E+00
*  1323 *  -0.51028E+00   0.35458E+00   0.00000E+00
*  1324 *   0.51028E+00   0.35458E+00   0.00000E+00
*  1325 *  -0.51028E+00  -0.35458E+00   0.00000E+00
*  1326 *   0.51028E+00  -0.35458E+00   0.00000E+00
*  1327 *  -0.51028E+00   0.00000E+00   0.35458E+00
*  1328 *   0.51028E+00   0.00000E+00   0.35458E+00
*  1329 *  -0.40000E-01  -0.32271E+00  -0.53061E+00
*  1330 *   0.40000E-01  -0.32271E+00  -0.53061E+00
*  1331 *  -0.40000E-01   0.32271E+00  -0.53061E+00
*  1332 *   0.40000E-01   0.32271E+00  -0.53061E+00
*  1333 *  -0.40000E-01  -0.53061E+00  -0.32271E+00
*  1334 *   0.40000E-01  -0.53061E+00  -0.32271E+00
*  1335 *  -0.40000E-01   0.53061E+00  -0.32271E+00
*  1336 *   0.40000E-01   0.53061E+00  -0.32271E+00
*  1337 *  -0.40000E-01  -0.53061E+00   0.32271E+00
*  1338 *   0.40000E-01  -0.53061E+00   0.32271E+00
*  1339 *  -0.40000E-01   0.53061E+00   0.32271E+00
*  1340 *   0.40000E-01   0.53061E+00   0.32271E+00
*  1341 *  -0.40000E-01  -0.32271E+00   0.53061E+00
*  1342 *   0.40000E-01  -0.32271E+00   0.53061E+00
*  1343 *  -0.40000E-01   0.32271E+00   0.53061E+00
*  1344 *   0.40000E-01   0.32271E+00   0.53061E+00
*  1345 *  -0.60976E+00   0.00000E+00  -0.13245E+00
*  1346 *   0.60976E+00   0.00000E+00  -0.13245E+00
*  1347 *  -0.60976E+00   0.13245E+00   0.00000E+00
*  1348 *   0.60976E+00   0.13245E+00   0.00000E+00
*  1349 *  -0.60976E+00  -0.13245E+00   0.00000E+00
*  1350 *   0.60976E+00  -0.13245E+00   0.00000E+00
*  1351 *  -0.60976E+00   0.00000E+00   0.13245E+00
*  1352 *   0.60976E+00   0.00000E+00   0.13245E+00
*  1353 *  -0.57152E+00   0.00000E+00  -0.25064E+00
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* 1354 *   0.57152E+00   0.00000E+00  -0.25064E+00
* 1355 *  -0.57152E+00   0.25064E+00   0.00000E+00
* 1356 *   0.57152E+00   0.25064E+00   0.00000E+00
* 1357 *  -0.57152E+00  -0.25064E+00   0.00000E+00
* 1358 *   0.57152E+00  -0.25064E+00   0.00000E+00
* 1359 *  -0.57152E+00   0.00000E+00   0.25064E+00
* 1360 *   0.57152E+00   0.00000E+00   0.25064E+00
* 1361 *   0.40000E-01   0.00000E+00  -0.62369E+00
* 1362 *  -0.40000E-01   0.00000E+00  -0.62369E+00
* 1363 *   0.40000E-01   0.62369E+00   0.00000E+00
* 1364 *  -0.40000E-01   0.62369E+00   0.00000E+00
* 1365 *   0.40000E-01  -0.62369E+00   0.00000E+00
* 1366 *  -0.40000E-01  -0.62369E+00   0.00000E+00
* 1367 *   0.40000E-01   0.00000E+00   0.62369E+00
* 1368 *  -0.40000E-01   0.00000E+00   0.62369E+00
* 1369 *  -0.62500E+00   0.00000E+00   0.00000E+00
* 1370 *   0.62500E+00   0.00000E+00   0.00000E+00
* 1371 *  -0.67575E+00   0.15796E+00  -0.15796E+00
* 1372 *   0.67575E+00   0.15796E+00  -0.15796E+00
* 1373 *  -0.67575E+00  -0.15796E+00  -0.15796E+00
* 1374 *   0.67575E+00  -0.15796E+00  -0.15796E+00
* 1375 *  -0.67575E+00   0.15796E+00   0.15796E+00
* 1376 *   0.67575E+00   0.15796E+00   0.15796E+00
* 1377 *  -0.67575E+00  -0.15796E+00   0.15796E+00
* 1378 *   0.67575E+00  -0.15796E+00   0.15796E+00
* 1379 *  -0.26033E+00   0.56673E+00  -0.34296E+00
* 1380 *   0.26033E+00   0.56673E+00  -0.34296E+00
* 1381 *  -0.26033E+00  -0.56673E+00   0.34296E+00
* 1382 *   0.26033E+00  -0.56673E+00   0.34296E+00
* 1383 *  -0.26033E+00   0.34296E+00  -0.56673E+00
* 1384 *   0.26033E+00   0.34296E+00  -0.56673E+00
* 1385 *  -0.26033E+00  -0.34296E+00  -0.56673E+00
* 1386 *   0.26033E+00  -0.34296E+00  -0.56673E+00
* 1387 *  -0.26033E+00  -0.56673E+00  -0.34296E+00
* 1388 *   0.26033E+00  -0.56673E+00  -0.34296E+00
* 1389 *  -0.26033E+00   0.56673E+00   0.34296E+00
* 1390 *   0.26033E+00   0.56673E+00   0.34296E+00
* 1391 *  -0.26033E+00   0.34296E+00   0.56673E+00
* 1392 *   0.26033E+00   0.34296E+00   0.56673E+00
* 1393 *  -0.26033E+00  -0.34296E+00   0.56673E+00
* 1394 *   0.26033E+00  -0.34296E+00   0.56673E+00
* 1395 *  -0.40000E-01  -0.68179E+00  -0.20253E+00
* 1396 *   0.40000E-01  -0.68179E+00  -0.20253E+00
* 1397 *  -0.40000E-01   0.68179E+00   0.20253E+00
* 1398 *   0.40000E-01   0.68179E+00   0.20253E+00
* 1399 *  -0.40000E-01   0.20253E+00  -0.68179E+00
* 1400 *   0.40000E-01   0.20253E+00  -0.68179E+00
* 1401 *  -0.40000E-01  -0.20253E+00  -0.68179E+00
* 1402 *   0.40000E-01  -0.20253E+00  -0.68179E+00
* 1403 *   0.40000E-01   0.68179E+00  -0.20253E+00
* 1404 *  -0.40000E-01   0.68179E+00  -0.20253E+00
* 1405 *  -0.40000E-01  -0.68179E+00   0.20253E+00
* 1406 *   0.40000E-01  -0.68179E+00   0.20253E+00
* 1407 *  -0.40000E-01   0.20253E+00   0.68179E+00
* 1408 *   0.40000E-01   0.20253E+00   0.68179E+00
* 1409 *  -0.40000E-01  -0.20253E+00   0.68179E+00
* 1410 *   0.40000E-01  -0.20253E+00   0.68179E+00
* 1411 *  -0.69356E+00   0.80763E-01  -0.14521E+00
* 1412 *   0.69356E+00   0.80763E-01  -0.14521E+00
* 1413 *  -0.69356E+00  -0.80763E-01  -0.14521E+00
* 1414 *   0.69356E+00  -0.80763E-01  -0.14521E+00
* 1415 *  -0.69356E+00   0.14521E+00  -0.80763E-01
* 1416 *   0.69356E+00   0.14521E+00  -0.80763E-01
* 1417 *  -0.69356E+00  -0.14521E+00  -0.80763E-01
* 1418 *   0.69356E+00  -0.14521E+00  -0.80763E-01
* 1419 *  -0.69356E+00   0.14521E+00   0.80763E-01
* 1420 *   0.69356E+00   0.14521E+00   0.80763E-01
* 1421 *  -0.69356E+00  -0.14521E+00   0.80763E-01
* 1422 *   0.69356E+00  -0.14521E+00   0.80763E-01
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*  1423  *  -0.69356E+00   0.80763E-01   0.14521E+00
*  1424  *   0.69356E+00   0.80763E-01   0.14521E+00
*  1425  *  -0.69356E+00  -0.80763E-01   0.14521E+00
*  1426  *   0.69356E+00  -0.80763E-01   0.14521E+00
*  1427  *  -0.67575E+00   0.87141E-01  -0.21246E+00
*  1428  *   0.67575E+00   0.87141E-01  -0.21246E+00
*  1429  *  -0.67575E+00  -0.87141E-01  -0.21246E+00
*  1430  *   0.67575E+00  -0.87141E-01  -0.21246E+00
*  1431  *  -0.67575E+00   0.21246E+00  -0.87141E-01
*  1432  *   0.67575E+00   0.21246E+00  -0.87141E-01
*  1433  *  -0.67575E+00  -0.21246E+00  -0.87141E-01
*  1434  *   0.67575E+00  -0.21246E+00  -0.87141E-01
*  1435  *  -0.67575E+00   0.21246E+00   0.87141E-01
*  1436  *   0.67575E+00   0.21246E+00   0.87141E-01
*  1437  *  -0.67575E+00  -0.21246E+00   0.87141E-01
*  1438  *   0.67575E+00  -0.21246E+00   0.87141E-01
*  1439  *  -0.67575E+00   0.87141E-01   0.21246E+00
*  1440  *   0.67575E+00   0.87141E-01   0.21246E+00
*  1441  *  -0.67575E+00  -0.87141E-01   0.21246E+00
*  1442  *   0.67575E+00  -0.87141E-01   0.21246E+00
*  1443  *  -0.65344E+00   0.17072E+00  -0.23160E+00
*  1444  *   0.65344E+00   0.17072E+00  -0.23160E+00
*  1445  *  -0.65344E+00  -0.17072E+00  -0.23160E+00
*  1446  *   0.65344E+00  -0.17072E+00  -0.23160E+00
*  1447  *  -0.65344E+00   0.17072E+00   0.23160E+00
*  1448  *   0.65344E+00   0.17072E+00   0.23160E+00
*  1449  *  -0.65344E+00  -0.17072E+00   0.23160E+00
*  1450  *   0.65344E+00  -0.17072E+00   0.23160E+00
*  1451  *  -0.65344E+00   0.23160E+00  -0.17072E+00
*  1452  *   0.65344E+00   0.23160E+00  -0.17072E+00
*  1453  *  -0.65344E+00  -0.23160E+00  -0.17072E+00
*  1454  *   0.65344E+00  -0.23160E+00  -0.17072E+00
*  1455  *  -0.65344E+00   0.23160E+00   0.17072E+00
*  1456  *   0.65344E+00   0.23160E+00   0.17072E+00
*  1457  *  -0.65344E+00  -0.23160E+00   0.17072E+00
*  1458  *   0.65344E+00  -0.23160E+00   0.17072E+00
*  1459  *  -0.70687E+00   0.74386E-01  -0.74386E-01
*  1460  *   0.70687E+00   0.74386E-01  -0.74386E-01
*  1461  *  -0.70687E+00  -0.74386E-01  -0.74386E-01
*  1462  *   0.70687E+00  -0.74386E-01  -0.74386E-01
*  1463  *  -0.70687E+00   0.74386E-01   0.74386E-01
*  1464  *   0.70687E+00   0.74386E-01   0.74386E-01
*  1465  *  -0.70687E+00  -0.74386E-01   0.74386E-01
*  1466  *   0.70687E+00  -0.74386E-01   0.74386E-01
*  1467  *  -0.43188E+00   0.16230E+00  -0.54636E+00
*  1468  *   0.43188E+00   0.16230E+00  -0.54636E+00
*  1469  *  -0.43188E+00  -0.16230E+00  -0.54636E+00
*  1470  *   0.43188E+00  -0.16230E+00  -0.54636E+00
*  1471  *  -0.43188E+00   0.54636E+00  -0.16230E+00
*  1472  *   0.43188E+00   0.54636E+00  -0.16230E+00
*  1473  *  -0.43188E+00  -0.54636E+00  -0.16230E+00
*  1474  *   0.43188E+00  -0.54636E+00  -0.16230E+00
*  1475  *  -0.43188E+00   0.54636E+00   0.16230E+00
*  1476  *   0.43188E+00   0.54636E+00   0.16230E+00
*  1477  *  -0.43188E+00  -0.54636E+00   0.16230E+00
*  1478  *   0.43188E+00  -0.54636E+00   0.16230E+00
*  1479  *  -0.43188E+00   0.16230E+00   0.54636E+00
*  1480  *   0.43188E+00   0.16230E+00   0.54636E+00
*  1481  *  -0.43188E+00  -0.16230E+00   0.54636E+00
*  1482  *   0.43188E+00  -0.16230E+00   0.54636E+00
*  1483  *  -0.65344E+00   0.93519E-01  -0.27616E+00
*  1484  *   0.65344E+00   0.93519E-01  -0.27616E+00
*  1485  *  -0.65344E+00  -0.93519E-01  -0.27616E+00
*  1486  *   0.65344E+00  -0.93519E-01  -0.27616E+00
*  1487  *  -0.65344E+00   0.27616E+00  -0.93519E-01
*  1488  *   0.65344E+00   0.27616E+00  -0.93519E-01
*  1489  *  -0.65344E+00  -0.27616E+00  -0.93519E-01
*  1490  *   0.65344E+00  -0.27616E+00  -0.93519E-01
*  1491  *  -0.65344E+00   0.27616E+00   0.93519E-01
```

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* 1492 *   0.65344E+00   0.27616E+00   0.93519E-01
* 1493 *  -0.65344E+00  -0.27616E+00   0.93519E-01
* 1494 *   0.65344E+00  -0.27616E+00   0.93519E-01
* 1495 *  -0.65344E+00   0.93519E-01   0.27616E+00
* 1496 *   0.65344E+00   0.93519E-01   0.27616E+00
* 1497 *  -0.65344E+00  -0.93519E-01   0.27616E+00
* 1498 *   0.65344E+00  -0.93519E-01   0.27616E+00
* 1499 *   0.00000E+00   0.37234E+00  -0.61234E+00
* 1500 *   0.00000E+00  -0.37234E+00  -0.61234E+00
* 1501 *   0.00000E+00  -0.61234E+00  -0.37234E+00
* 1502 *   0.00000E+00   0.61234E+00  -0.37234E+00
* 1503 *   0.00000E+00  -0.61234E+00   0.37234E+00
* 1504 *   0.00000E+00   0.61234E+00   0.37234E+00
* 1505 *   0.00000E+00   0.37234E+00   0.61234E+00
* 1506 *   0.00000E+00  -0.37234E+00   0.61234E+00
* 1507 *  -0.40000E-01  -0.37197E+00  -0.61160E+00
* 1508 *   0.40000E-01  -0.37197E+00  -0.61160E+00
* 1509 *  -0.40000E-01   0.61160E+00  -0.37197E+00
* 1510 *   0.40000E-01   0.61160E+00  -0.37197E+00
* 1511 *  -0.40000E-01  -0.61160E+00   0.37197E+00
* 1512 *   0.40000E-01  -0.61160E+00   0.37197E+00
* 1513 *  -0.40000E-01   0.37197E+00   0.61160E+00
* 1514 *   0.40000E-01   0.37197E+00   0.61160E+00
* 1515 *  -0.40000E-01   0.37197E+00  -0.61160E+00
* 1516 *   0.40000E-01   0.37197E+00  -0.61160E+00
* 1517 *  -0.40000E-01  -0.61160E+00  -0.37197E+00
* 1518 *   0.40000E-01  -0.61160E+00  -0.37197E+00
* 1519 *  -0.40000E-01   0.61160E+00   0.37197E+00
* 1520 *   0.40000E-01   0.61160E+00   0.37197E+00
* 1521 *  -0.40000E-01  -0.37197E+00   0.61160E+00
* 1522 *   0.40000E-01  -0.37197E+00   0.61160E+00
* 1523 *   0.00000E+00   0.00000E+00  -0.72000E+00
* 1524 *   0.40000E-01   0.00000E+00  -0.71889E+00
* 1525 *  -0.40000E-01   0.00000E+00  -0.71889E+00
* 1526 *  -0.26033E+00   0.00000E+00  -0.67129E+00
* 1527 *   0.26033E+00   0.00000E+00  -0.67129E+00
* 1528 *  -0.43188E+00   0.00000E+00  -0.57609E+00
* 1529 *   0.43188E+00   0.00000E+00  -0.57609E+00
* 1530 *  -0.40000E-01   0.50833E+00  -0.50833E+00
* 1531 *   0.40000E-01   0.50833E+00  -0.50833E+00
* 1532 *  -0.40000E-01  -0.50833E+00  -0.50833E+00
* 1533 *   0.40000E-01  -0.50833E+00  -0.50833E+00
* 1534 *  -0.43188E+00   0.29809E+00  -0.49012E+00
* 1535 *   0.43188E+00   0.29809E+00  -0.49012E+00
* 1536 *  -0.43188E+00  -0.29809E+00  -0.49012E+00
* 1537 *   0.43188E+00  -0.29809E+00  -0.49012E+00
* 1538 *  -0.55080E+00   0.00000E+00  -0.46375E+00
* 1539 *   0.55080E+00   0.00000E+00  -0.46375E+00
* 1540 *  -0.43188E+00   0.40736E+00  -0.40736E+00
* 1541 *   0.43188E+00   0.40736E+00  -0.40736E+00
* 1542 *  -0.43188E+00  -0.40736E+00  -0.40736E+00
* 1543 *   0.43188E+00  -0.40736E+00  -0.40736E+00
* 1544 *  -0.55080E+00   0.24025E+00  -0.39484E+00
* 1545 *   0.55080E+00   0.24025E+00  -0.39484E+00
* 1546 *  -0.55080E+00  -0.24025E+00  -0.39484E+00
* 1547 *   0.55080E+00  -0.24025E+00  -0.39484E+00
* 1548 *  -0.62664E+00   0.00000E+00  -0.35458E+00
* 1549 *   0.62664E+00   0.00000E+00  -0.35458E+00
* 1550 *  -0.62664E+00   0.99897E-01  -0.33628E+00
* 1551 *   0.62664E+00   0.99897E-01  -0.33628E+00
* 1552 *  -0.62664E+00  -0.99897E-01  -0.33628E+00
* 1553 *   0.62664E+00  -0.99897E-01  -0.33628E+00
* 1554 *  -0.65344E+00   0.00000E+00  -0.30439E+00
* 1555 *   0.65344E+00   0.00000E+00  -0.30439E+00
* 1556 *  -0.62664E+00   0.18347E+00  -0.30167E+00
* 1557 *   0.62664E+00   0.18347E+00  -0.30167E+00
* 1558 *  -0.62664E+00  -0.18347E+00  -0.30167E+00
* 1559 *   0.62664E+00  -0.18347E+00  -0.30167E+00
* 1560 *  -0.43188E+00  -0.49012E+00  -0.29809E+00
```

```
*  1561 *   0.43188E+00  -0.49012E+00  -0.29809E+00
*  1562 *  -0.43188E+00   0.49012E+00  -0.29809E+00
*  1563 *   0.43188E+00   0.49012E+00  -0.29809E+00
*  1564 *  -0.62664E+00   0.25073E+00  -0.25073E+00
*  1565 *   0.62664E+00   0.25073E+00  -0.25073E+00
*  1566 *  -0.62664E+00  -0.25073E+00  -0.25073E+00
*  1567 *   0.62664E+00  -0.25073E+00  -0.25073E+00
*  1568 *  -0.67575E+00   0.00000E+00  -0.25064E+00
*  1569 *   0.67575E+00   0.00000E+00  -0.25064E+00
*  1570 *  -0.55080E+00  -0.39484E+00  -0.24025E+00
*  1571 *   0.55080E+00  -0.39484E+00  -0.24025E+00
*  1572 *  -0.55080E+00   0.39484E+00  -0.24025E+00
*  1573 *   0.55080E+00   0.39484E+00  -0.24025E+00
*  1574 *  -0.69356E+00   0.00000E+00  -0.19333E+00
*  1575 *   0.69356E+00   0.00000E+00  -0.19333E+00
*  1576 *  -0.62664E+00  -0.30167E+00  -0.18347E+00
*  1577 *   0.62664E+00  -0.30167E+00  -0.18347E+00
*  1578 *  -0.62664E+00   0.30167E+00  -0.18347E+00
*  1579 *   0.62664E+00   0.30167E+00  -0.18347E+00
*  1580 *  -0.70687E+00   0.00000E+00  -0.13245E+00
*  1581 *   0.70687E+00   0.00000E+00  -0.13245E+00
*  1582 *  -0.62664E+00   0.33628E+00  -0.99897E-01
*  1583 *   0.62664E+00   0.33628E+00  -0.99897E-01
*  1584 *  -0.62664E+00  -0.33628E+00  -0.99897E-01
*  1585 *   0.62664E+00  -0.33628E+00  -0.99897E-01
*  1586 *  -0.71568E+00   0.00000E+00  -0.68008E-01
*  1587 *   0.71568E+00   0.00000E+00  -0.68008E-01
*  1588 *   0.00000E+00   0.72000E+00   0.00000E+00
*  1589 *  -0.43188E+00   0.57609E+00   0.00000E+00
*  1590 *   0.43188E+00   0.57609E+00   0.00000E+00
*  1591 *  -0.43188E+00  -0.57609E+00   0.00000E+00
*  1592 *   0.43188E+00  -0.57609E+00   0.00000E+00
*  1593 *   0.00000E+00  -0.72000E+00   0.00000E+00
*  1594 *   0.40000E-01   0.71889E+00   0.00000E+00
*  1595 *  -0.40000E-01   0.71889E+00   0.00000E+00
*  1596 *   0.40000E-01  -0.71889E+00   0.00000E+00
*  1597 *  -0.40000E-01  -0.71889E+00   0.00000E+00
*  1598 *  -0.62664E+00   0.35458E+00   0.00000E+00
*  1599 *   0.62664E+00   0.35458E+00   0.00000E+00
*  1600 *  -0.62664E+00  -0.35458E+00   0.00000E+00
*  1601 *   0.62664E+00  -0.35458E+00   0.00000E+00
*  1602 *  -0.55080E+00   0.46375E+00   0.00000E+00
*  1603 *   0.55080E+00   0.46375E+00   0.00000E+00
*  1604 *  -0.55080E+00  -0.46375E+00   0.00000E+00
*  1605 *   0.55080E+00  -0.46375E+00   0.00000E+00
*  1606 *  -0.67575E+00   0.25064E+00   0.00000E+00
*  1607 *   0.67575E+00   0.25064E+00   0.00000E+00
*  1608 *  -0.67575E+00  -0.25064E+00   0.00000E+00
*  1609 *   0.67575E+00  -0.25064E+00   0.00000E+00
*  1610 *  -0.65344E+00   0.30439E+00   0.00000E+00
*  1611 *   0.65344E+00   0.30439E+00   0.00000E+00
*  1612 *  -0.65344E+00  -0.30439E+00   0.00000E+00
*  1613 *   0.65344E+00  -0.30439E+00   0.00000E+00
*  1614 *  -0.70687E+00   0.13245E+00   0.00000E+00
*  1615 *   0.70687E+00   0.13245E+00   0.00000E+00
*  1616 *  -0.70687E+00  -0.13245E+00   0.00000E+00
*  1617 *   0.70687E+00  -0.13245E+00   0.00000E+00
*  1618 *  -0.26033E+00   0.67129E+00   0.00000E+00
*  1619 *   0.26033E+00   0.67129E+00   0.00000E+00
*  1620 *  -0.26033E+00  -0.67129E+00   0.00000E+00
*  1621 *   0.26033E+00  -0.67129E+00   0.00000E+00
*  1622 *  -0.71568E+00   0.68008E-01   0.00000E+00
*  1623 *   0.71568E+00   0.68008E-01   0.00000E+00
*  1624 *  -0.71568E+00  -0.68008E-01   0.00000E+00
*  1625 *   0.71568E+00  -0.68008E-01   0.00000E+00
*  1626 *  -0.69356E+00   0.19333E+00   0.00000E+00
*  1627 *   0.69356E+00   0.19333E+00   0.00000E+00
*  1628 *  -0.72000E+00   0.00000E+00   0.00000E+00
*  1629 *   0.72000E+00   0.00000E+00   0.00000E+00
```

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*  1630  *  -0.69356E+00  -0.19333E+00    0.00000E+00
*  1631  *   0.69356E+00  -0.19333E+00    0.00000E+00
*  1632  *  -0.71568E+00   0.00000E+00    0.68008E-01
*  1633  *   0.71568E+00   0.00000E+00    0.68008E-01
*  1634  *  -0.62664E+00   0.33628E+00    0.99897E-01
*  1635  *   0.62664E+00   0.33628E+00    0.99897E-01
*  1636  *  -0.62664E+00  -0.33628E+00    0.99897E-01
*  1637  *   0.62664E+00  -0.33628E+00    0.99897E-01
*  1638  *  -0.70687E+00   0.00000E+00    0.13245E+00
*  1639  *   0.70687E+00   0.00000E+00    0.13245E+00
*  1640  *  -0.62664E+00   0.30167E+00    0.18347E+00
*  1641  *   0.62664E+00   0.30167E+00    0.18347E+00
*  1642  *  -0.62664E+00  -0.30167E+00    0.18347E+00
*  1643  *   0.62664E+00  -0.30167E+00    0.18347E+00
*  1644  *  -0.69356E+00   0.00000E+00    0.19333E+00
*  1645  *   0.69356E+00   0.00000E+00    0.19333E+00
*  1646  *  -0.55080E+00  -0.39484E+00    0.24025E+00
*  1647  *   0.55080E+00  -0.39484E+00    0.24025E+00
*  1648  *  -0.55080E+00   0.39484E+00    0.24025E+00
*  1649  *   0.55080E+00   0.39484E+00    0.24025E+00
*  1650  *  -0.67575E+00   0.00000E+00    0.25064E+00
*  1651  *   0.67575E+00   0.00000E+00    0.25064E+00
*  1652  *  -0.62664E+00   0.25073E+00    0.25073E+00
*  1653  *   0.62664E+00   0.25073E+00    0.25073E+00
*  1654  *  -0.62664E+00  -0.25073E+00    0.25073E+00
*  1655  *   0.62664E+00  -0.25073E+00    0.25073E+00
*  1656  *  -0.43188E+00   0.49012E+00    0.29809E+00
*  1657  *   0.43188E+00   0.49012E+00    0.29809E+00
*  1658  *  -0.43188E+00  -0.49012E+00    0.29809E+00
*  1659  *   0.43188E+00  -0.49012E+00    0.29809E+00
*  1660  *  -0.62664E+00   0.18347E+00    0.30167E+00
*  1661  *   0.62664E+00   0.18347E+00    0.30167E+00
*  1662  *  -0.62664E+00  -0.18347E+00    0.30167E+00
*  1663  *   0.62664E+00  -0.18347E+00    0.30167E+00
*  1664  *  -0.65344E+00   0.00000E+00    0.30439E+00
*  1665  *   0.65344E+00   0.00000E+00    0.30439E+00
*  1666  *  -0.62664E+00   0.99897E-01    0.33628E+00
*  1667  *   0.62664E+00   0.99897E-01    0.33628E+00
*  1668  *  -0.62664E+00  -0.99897E-01    0.33628E+00
*  1669  *   0.62664E+00  -0.99897E-01    0.33628E+00
*  1670  *  -0.62664E+00   0.00000E+00    0.35458E+00
*  1671  *   0.62664E+00   0.00000E+00    0.35458E+00
*  1672  *  -0.55080E+00   0.24025E+00    0.39484E+00
*  1673  *   0.55080E+00   0.24025E+00    0.39484E+00
*  1674  *  -0.55080E+00  -0.24025E+00    0.39484E+00
*  1675  *   0.55080E+00  -0.24025E+00    0.39484E+00
*  1676  *  -0.43188E+00   0.40736E+00    0.40736E+00
*  1677  *   0.43188E+00   0.40736E+00    0.40736E+00
*  1678  *  -0.43188E+00  -0.40736E+00    0.40736E+00
*  1679  *   0.43188E+00  -0.40736E+00    0.40736E+00
*  1680  *  -0.55080E+00   0.00000E+00    0.46375E+00
*  1681  *   0.55080E+00   0.00000E+00    0.46375E+00
*  1682  *  -0.43188E+00  -0.29809E+00    0.49012E+00
*  1683  *   0.43188E+00  -0.29809E+00    0.49012E+00
*  1684  *  -0.43188E+00   0.29809E+00    0.49012E+00
*  1685  *   0.43188E+00   0.29809E+00    0.49012E+00
*  1686  *  -0.40000E-01   0.50833E+00    0.50833E+00
*  1687  *   0.40000E-01   0.50833E+00    0.50833E+00
*  1688  *  -0.40000E-01  -0.50833E+00    0.50833E+00
*  1689  *   0.40000E-01  -0.50833E+00    0.50833E+00
*  1690  *  -0.43188E+00   0.00000E+00    0.57609E+00
*  1691  *   0.43188E+00   0.00000E+00    0.57609E+00
*  1692  *  -0.26033E+00   0.00000E+00    0.67129E+00
*  1693  *   0.26033E+00   0.00000E+00    0.67129E+00
*  1694  *   0.40000E-01   0.00000E+00    0.71889E+00
*  1695  *  -0.40000E-01   0.00000E+00    0.71889E+00
*  1696  *   0.00000E+00   0.00000E+00    0.72000E+00
```

ELEMENTS

```
  HEXA20P    MAVART8D    4
*  1*    1    3   12   14   27   29   38   40    2    8    9   13   19 &
        20   23   24   28   34   35   39

  HEXA20P    MAVART8D    5
*  2*    3    5   14   16   29   31   40   42    4    9   10   15   20 &
        21   24   25   30   35   36   41

  HEXA20P    MAVART8D    6
*  3*    5    7   16   18   31   33   42   44    6   10   11   17   21 &
        22   25   26   32   36   37   43

  HEXA20P    MAVART8D    4
*  4*   12   14   49   51   38   40   64   66   13   45   46   50   23 &
        24   56   57   39   60   61   65

  HEXA20P    MAVART8D    5
*  5*   14   16   51   53   40   42   66   68   15   46   47   52   24 &
        25   57   58   41   61   62   67

  HEXA20P    MAVART8D    6
*  6*   16   18   53   55   42   44   68   70   17   47   48   54   25 &
        26   58   59   43   62   63   69

  HEXA20P    MAVART8D    7
*  7*    7   72   18   81   33   93   44  102   71   11   77   80   22 &
        86   26   89   92   37   98  101

  HEXA20P    MAVART8D    8
*  8*   72   74   81   83   93   95  102  104   73   77   78   82   86 &
        87   89   90   94   98   99  103

  HEXA20P    MAVART8D    9
*  9*   74   76   83   85   95   97  104  106   75   78   79   84   87 &
        88   90   91   96   99  100  105

  HEXA20P    MAVART8D    7
* 10*   18   81   55  111   44  102   70  123   80   48  107  110   26 &
        89   59  116  101   63  119  122

  HEXA20P    MAVART8D    8
* 11*   81   83  111  113  102  104  123  125   82  107  108  112   89 &
        90  116  117  103  119  120  124

  HEXA20P    MAVART8D    9
* 12*   83   85  113  115  104  106  125  127   84  108  109  114   90 &
        91  117  118  105  120  121  126

  HEXA20P    MAVART8D   10
* 13*   76  129   85  138   97  150  106  159  128   79  134  137   88 &
       143   91  146  149  100  155  158

  HEXA20P    MAVART8D   11
* 14*  129  131  138  140  150  152  159  161  130  134  135  139  143 &
       144  146  147  151  155  156  160

  HEXA20P    MAVART8D   12
* 15*  131  133  140  142  152  154  161  163  132  135  136  141  144 &
       145  147  148  153  156  157  162

  HEXA20P    MAVART8D   10
* 16*   85  138  115  168  106  159  127  180  137  109  164  167   91 &
       146  118  173  158  121  176  179

  HEXA20P    MAVART8D   11
* 17*  138  140  168  170  159  161  180  182  139  164  165  169  146 &
       147  173  174  160  176  177  181

  HEXA20P    MAVART8D   12
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* 18*   140   142   170   172   161   163   182   184   141   165   166   171   147 &
        148   174   175   162   177   178   183

 HEXA20P    MAVART8D     13
* 19*   133   186   142   193   154   202   163   209   185   136   190   192   145 &
        197   148   199   201   157   206   208

 HEXA20P    MAVART8D     14
* 20*   186   188   193   195   202   204   209   211   187   190   191   194   197 &
        198   199   200   203   206   207   210

 HEXA20P    MAVART8D     15
* 21*   188     1   195    12   204    27   211    38   189   191     8   196   198 &
         19   200    23   205   207    34   212

 HEXA20P    MAVART8D     13
* 22*   142   193   172   216   163   209   184   225   192   166   213   215   148 &
        199   175   220   208   178   222   224

 HEXA20P    MAVART8D     14
* 23*   193   195   216   218   209   211   225   227   194   213   214   217   199 &
        200   220   221   210   222   223   226

 HEXA20P    MAVART8D     15
* 24*   195    12   218    49   211    38   227    64   196   214    45   219   200 &
         23   221    56   212   223    60   228

 SHEL06C    ST4340        1
* 25*    38    40   235    39   230   229
* 26*   235    40   237   230   231   236
* 27*    40    42   237    41   232   231
* 28*   237    42   239   232   233   238
* 29*    42    44   239    43   234   233
* 30*   235   237   244   236   241   240
* 31*   244   237   246   241   242   245
* 32*   237   239   246   238   243   242
* 33*   244   246   249   245   248   247
* 34*    44   102   239   101   250   234
* 35*   239   102   256   250   251   255
* 36*   102   104   256   103   252   251
* 37*   256   104   258   252   253   257
* 38*   104   106   258   105   254   253
* 39*   239   256   246   255   259   243
* 40*   246   256   263   259   260   262
* 41*   256   258   263   257   261   260
* 42*   246   263   249   262   264   248
* 43*   106   159   258   158   265   254
* 44*   258   159   271   265   266   270
* 45*   159   161   271   160   267   266
* 46*   271   161   273   267   268   272
* 47*   161   163   273   162   269   268
* 48*   258   271   263   270   274   261
* 49*   263   271   278   274   275   277
* 50*   271   273   278   272   276   275
* 51*   263   278   249   277   279   264
* 52*   163   209   273   208   280   269
* 53*   273   209   285   280   281   284
* 54*   209   211   285   210   282   281
* 55*   285   211   235   282   283   286
* 56*   211    38   235   212   229   283
* 57*   273   285   278   284   287   276
* 58*   278   285   244   287   288   289
* 59*   285   235   244   286   240   288
* 60*   278   244   249   289   247   279
* 61*    12    14   296    13   291   290
* 62*   296    14   298   291   292   297
* 63*    14    16   298    15   293   292
* 64*   298    16   300   293   294   299
* 65*    16    18   300    17   295   294
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*  66*  296   298   305   297   302   301
*  67*  305   298   307   302   303   306
*  68*  298   300   307   299   304   303
*  69*  305   307   310   306   309   308
*  70*   18    81   300    80   311   295
*  71*  300    81   317   311   312   316
*  72*   81    83   317    82   313   312
*  73*  317    83   319   313   314   318
*  74*   83    85   319    84   315   314
*  75*  300   317   307   316   320   304
*  76*  307   317   324   320   321   323
*  77*  317   319   324   318   322   321
*  78*  307   324   310   323   325   309
*  79*   85   138   319   137   326   315
*  80*  319   138   332   326   327   331
*  81*  138   140   332   139   328   327
*  82*  332   140   334   328   329   333
*  83*  140   142   334   141   330   329
*  84*  319   332   324   331   335   322
*  85*  324   332   339   335   336   338
*  86*  332   334   339   333   337   336
*  87*  324   339   310   338   340   325
*  88*  142   193   334   192   341   330
*  89*  334   193   346   341   342   345
*  90*  193   195   346   194   343   342
*  91*  346   195   296   343   344   347
*  92*  195    12   296   196   290   344
*  93*  334   346   339   345   348   337
*  94*  339   346   305   348   349   350
*  95*  346   296   305   347   301   349
*  96*  339   305   310   350   308   340

   QUAD08E    FICFIBER      2
*  97*    1     3    27    29     2    19    20    28
*  98*    3     5    29    31     4    20    21    30
*  99*    5     7    31    33     6    21    22    32
*100*     7    72    33    93    71    22    86    92
*101*    72    74    93    95    73    86    87    94
*102*    74    76    95    97    75    87    88    96
*103*    76   129    97   150   128    88   143   149
*104*   129   131   150   152   130   143   144   151
*105*   131   133   152   154   132   144   145   153
*106*   133   186   154   202   185   145   197   201
*107*   186   188   202   204   187   197   198   203
*108*   188     1   204    27   189   198    19   205

   TRIA12I                   0
*109*   352   370   374   249   246   244   354   364   358   248   245   247
*110*   374   406   440   244   237   235   384   418   398   241   236   240
*111*   374   370   406   244   246   237   364   380   384   245   242   241
*112*   370   436   406   246   239   237   394   414   380   243   238   242
*113*   440   560   578   235    40    38   474   548   488   230    39   229
*114*   440   406   560   235   237    40   418   458   474   236   231   230
*115*   406   566   560   237    42    40   454   584   458   232    41   231
*116*   406   436   566   237   239    42   414   470   454   238   233   232
*117*   436   574   566   239    44    42   484   544   470   234    43   233
*118*   352   372   370   249   263   246   356   362   354   264   262   248
*119*   370   404   436   246   256   239   378   412   394   259   255   243
*120*   370   372   404   246   263   256   362   382   378   262   260   259
*121*   372   438   404   263   258   256   396   416   382   261   257   260
*122*   436   558   574   239   102    44   468   542   484   250   101   234
*123*   436   404   558   239   256   102   412   452   468   255   251   250
*124*   404   568   558   256   104   102   456   582   452   252   103   251
*125*   404   438   568   256   258   104   416   472   456   257   253   252
*126*   438   576   568   258   106   104   486   546   472   254   105   253
*127*   352   376   372   249   278   263   360   366   356   279   277   264
*128*   372   408   438   263   271   258   386   420   396   274   270   261
*129*   372   376   408   263   278   271   366   390   386   277   275   274
*130*   376   442   408   278   273   271   400   424   390   276   272   275
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131	438	562	576	258	159	106	476	550	486	265	158	254	
132	438	408	562	258	271	159	420	460	476	270	266	265	
133	408	572	562	271	161	159	464	586	460	267	160	266	
134	408	442	572	271	273	161	424	480	464	272	268	267	
135	442	580	572	273	163	161	490	554	480	269	162	268	
136	352	374	376	249	244	278	358	368	360	247	289	279	
137	376	410	442	278	285	273	392	426	400	287	284	276	
138	376	374	410	278	244	285	368	388	392	289	288	287	
139	374	440	410	244	235	285	398	422	388	240	286	288	
140	442	564	580	273	209	163	482	556	490	280	208	269	
141	442	410	564	273	285	209	426	466	482	284	281	280	
142	410	570	564	285	211	209	462	588	466	282	210	281	
143	410	440	570	285	235	211	422	478	462	286	283	282	
144	440	578	570	235	38	211	448	552	478	229	212	283	
145	369	373	351	307	305	310	363	357	353	306	308	309	
146	435	405	369	300	298	307	413	379	393	299	303	304	
147	369	405	373	307	298	305	379	383	363	303	302	306	
148	405	439	373	298	296	305	417	397	383	297	301	302	
149	573	565	435	18	16	300	543	469	483	17	294	295	
150	435	565	405	300	16	298	469	453	413	294	293	299	
151	565	559	405	16	14	298	583	457	453	15	292	293	
152	405	559	439	298	14	296	457	473	417	292	291	297	
153	559	577	439	14	12	296	547	487	473	13	290	291	
154	371	369	351	324	307	310	361	353	355	323	309	325	
155	437	403	371	319	317	324	415	381	395	318	321	322	
156	371	403	369	324	317	307	381	377	361	321	320	323	
157	403	435	369	317	300	307	411	393	377	316	304	320	
158	575	567	437	85	83	319	545	471	485	84	314	315	
159	437	567	403	319	83	317	471	455	415	314	313	318	
160	567	557	403	83	81	317	581	451	455	82	312	313	
161	403	557	435	317	81	300	451	467	411	312	311	316	
162	557	573	435	81	18	300	541	483	467	80	295	311	
163	375	371	351	339	324	310	365	355	359	338	325	340	
164	441	407	375	334	332	339	423	389	399	333	336	337	
165	375	407	371	339	332	324	389	385	365	336	335	338	
166	407	437	371	332	319	324	395	385	331	322	335	
167	579	571	441	142	140	334	553	479	489	141	329	330	
168	441	571	407	334	140	332	479	463	423	329	328	333	
169	571	561	407	140	138	332	585	459	463	139	327	328	
170	407	561	437	332	138	319	459	475	419	327	326	331	
171	561	575	437	138	85	319	549	485	475	137	315	326	
172	373	375	351	305	339	310	367	359	357	350	340	308	
173	439	409	373	296	346	305	421	387	397	347	349	301	
174	373	409	375	305	346	339	387	391	367	349	348	350	
175	409	441	375	346	334	339	425	399	391	345	337	348	
176	577	569	439	12	195	296	551	477	487	196	344	290	
177	439	569	409	296	195	346	477	461	421	344	343	347	
178	569	563	409	195	193	346	587	465	461	194	342	343	
179	409	563	441	346	193	334	465	481	425	342	341	345	
180	563	579	441	193	142	334	555	489	481	192	330	341	

QUAD 16 I   0

181	560	578	750	766	40	38	29	27	548	658	674	724	39 &
	35	34	28										
182	566	560	748	750	42	40	31	29	584	656	658	772	41 &
	36	35	30										
183	574	566	762	748	44	42	33	31	544	670	656	720	43 &
	37	36	32										
184	558	574	746	762	102	44	93	33	542	654	670	718	101 &
	98	37	92										
185	568	558	752	746	104	102	95	93	582	660	654	770	103 &
	99	98	94										
186	576	568	764	752	106	104	97	95	546	672	660	722	105 &
	100	99	96										
187	562	576	756	764	159	106	150	97	550	664	672	726	158 &
	155	100	149										
188	572	562	758	756	161	159	152	150	586	666	664	774	160 &
	156	155	151										
189	580	572	768	758	163	161	154	152	554	676	666	730	162 &

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         157   156   153
*190*    564   580   760   768   209   163   202   154   556   668   676   732   208 &
         206   157   201
*191*    570   564   754   760   211   209   204   202   588   662   668   776   210 &
         207   206   203
*192*    578   570   766   754    38   211    27   204   552   674   662   728   212 &
          34   207   205
*193*    749   765   750   766     3     1    29    27   723   734   743   724     2 &
          20    19    28
*194*    747   749   748   750     5     3    31    29   771   737   734   772     4 &
          21    20    30
*195*    761   747   762   748     7     5    33    31   719   741   737   720     6 &
          22    21    32
*196*    745   761   746   762    72     7    93    33   717   733   741   718    71 &
          86    22    92
*197*    751   745   752   746    74    72    95    93   769   738   733   770    73 &
          87    86    94
*198*    763   751   764   752    76    74    97    95   721   742   738   722    75 &
          88    87    96
*199*    755   763   756   764   129    76   150    97   725   735   742   726   128 &
         143    88   149
*200*    757   755   758   756   131   129   152   150   773   740   735   774   130 &
         144   143   151
*201*    767   757   768   758   133   131   154   152   729   744   740   730   132 &
         145   144   153
*202*    759   767   760   768   186   133   202   154   731   736   744   732   185 &
         197   145   201
*203*    753   759   754   760   188   186   204   202   775   739   736   776   187 &
         198   197   203
*204*    765   753   766   754     1   188    27   204   727   743   739   728   189 &
          19   198   205
*205*    559   577   749   765    14    12     3     1   547   657   673   723    13 &
           9     8     2
*206*    565   559   747   749    16    14     5     3   583   655   657   771    15 &
          10     9     4
*207*    573   565   761   747    18    16     7     5   543   669   655   719    17 &
          11    10     6
*208*    557   573   745   761    81    18    72     7   541   653   669   717    80 &
          77    11    71
*209*    567   557   751   745    83    81    74    72   581   659   653   769    82 &
          78    77    73
*210*    575   567   763   751    85    83    76    74   545   671   659   721    84 &
          79    78    75
*211*    561   575   755   763   138    85   129    76   549   663   671   725   137 &
         134    79   128
*212*    571   561   757   755   140   138   131   129   585   665   663   773   139 &
         135   134   130
*213*    579   571   767   757   142   140   133   131   553   675   665   729   141 &
         136   135   132
*214*    563   579   759   767   193   142   186   133   555   667   675   731   192 &
         190   136   185
*215*    569   563   753   759   195   193   188   186   587   661   667   775   194 &
         191   190   187
*216*    577   569   765   753    12   195     1   188   551   673   661   727   196 &
           8   191   189

PRIS15F  EAU           0
*217*    578   560   440   814   796   642   548   474   488   650   624   496   784 &
         704   714
*218*    560   406   440   796   592   642   458   418   474   624   446   496   684 &
         612   704
*219*    560   566   406   796   802   592   584   454   458   624   630   446   820 &
         680   684
*220*    566   436   406   802   638   592   470   414   454   630   492   446   696 &
         608   680
*221*    566   574   436   802   810   638   544   484   470   630   646   492   780 &
         710   696
*222*    440   406   374   642   592   538   418   384   398   496   446   432   612 &
         524   602
```

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223	406	370	374	592	534	538	380	364	384	446	428	432	520 &
	504	524											
224	406	436	370	592	638	534	414	394	380	446	492	428	608 &
	598	520											
225	374	370	352	538	534	500	364	354	358	432	428	402	504 &
	510	514											
226	574	558	436	810	794	638	542	468	484	646	622	492	778 &
	694	710											
227	558	404	436	794	590	638	452	412	468	622	444	492	678 &
	606	694											
228	558	568	404	794	804	590	582	456	452	622	632	444	818 &
	682	678											
229	568	438	404	804	640	590	472	416	456	632	494	444	702 &
	610	682											
230	568	576	438	804	812	640	546	486	472	632	648	494	782 &
	712	702											
231	436	404	370	638	590	534	412	378	394	492	444	428	606 &
	518	598											
232	404	372	370	590	536	534	382	362	378	444	430	428	522 &
	502	518											
233	404	438	372	590	640	536	416	396	382	444	494	430	610 &
	600	522											
234	370	372	352	534	536	500	362	356	354	428	430	402	502 &
	512	510											
235	576	562	438	812	798	640	550	476	486	648	626	494	786 &
	706	712											
236	562	408	438	798	594	640	460	420	476	626	448	494	686 &
	614	706											
237	562	572	408	798	808	594	586	464	460	626	636	448	822 &
	690	686											
238	572	442	408	808	644	594	480	424	464	636	498	448	698 &
	618	690											
239	572	580	442	808	816	644	554	490	480	636	652	498	790 &
	716	698											
240	438	408	372	640	594	536	420	386	396	494	448	430	614 &
	526	600											
241	408	376	372	594	540	536	390	366	386	448	434	430	530 &
	506	526											
242	408	442	376	594	644	540	424	400	390	448	498	434	618 &
	604	530											
243	372	376	352	536	540	500	366	360	356	430	434	402	506 &
	516	512											
244	580	564	442	816	800	644	556	482	490	652	628	498	792 &
	700	716											
245	564	410	442	800	596	644	466	426	482	628	450	498	692 &
	620	700											
246	564	570	410	800	806	596	588	462	466	628	634	450	824 &
	688	692											
247	570	440	410	806	642	596	478	422	462	634	496	450	708 &
	616	688											
248	570	578	440	806	814	642	552	488	478	634	650	496	788 &
	714	708											
249	442	410	376	644	596	540	426	392	400	498	450	434	620 &
	532	604											
250	410	374	376	596	538	540	388	368	392	450	432	434	528 &
	508	532											
251	410	440	374	596	642	538	422	398	388	450	496	432	616 &
	602	528											
252	376	374	352	540	538	500	368	358	360	434	432	402	508 &
	514	516											
253	814	796	642	1202	1152	1270	784	704	714	920	904	848	1106 &
	1010	1262											
254	796	592	642	1152	950	1270	684	612	704	904	830	848	994 &
	962	1010											
255	796	802	592	1152	1150	950	820	680	684	904	902	830	1252 &
	990	994											
256	802	638	592	1150	1266	950	696	608	680	902	844	830	1006 &
	958	990											
257	802	810	638	1150	1197	1266	780	710	696	902	916	844	1102 &

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      1258 1006
*258*  642  592  538 1270  950 1176  612  524  602  848  830  840  962 &
       978 1192
*259*  592  534  538  950 1172 1176  520  504  524  830  836  840  974 &
      1022  978
*260*  592  638  534  950 1266 1172  608  598  520  830  844  836  958 &
      1188  974
*261*  538  534  500 1176 1172 1205  504  510  514  840  836  826 1022 &
      1164 1168
*262*  810  794  638 1197 1148 1266  778  694  710  916  900  844 1100 &
      1004 1258
*263*  794  590  638 1148  948 1266  678  606  694  900  828  844  988 &
       956 1004
*264*  794  804  590 1148 1154  948  818  682  678  900  906  828 1250 &
       992  988
*265*  804  640  590 1154 1268  948  702  610  682  906  846  828 1008 &
       960  992
*266*  804  812  640 1154 1200 1268  782  712  702  906  918  846 1104 &
      1260 1008
*267*  638  590  534 1266  948 1172  606  518  598  844  828  836  956 &
       972 1188
*268*  590  536  534  948 1174 1172  522  502  518  828  838  836  976 &
      1020  972
*269*  590  640  536  948 1268 1174  610  600  522  828  846  838  960 &
      1190  976
*270*  534  536  500 1172 1174 1205  502  512  510  836  838  826 1020 &
      1166 1164
*271*  812  798  640 1200 1156 1268  786  706  712  918  908  846 1108 &
      1012 1260
*272*  798  594  640 1156  952 1268  686  614  706  908  832  846  996 &
       964 1012
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       852   624   630 1238  928  926   820
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       868   630   646 1044  926  940   780
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       854   646   622 1052  940  924   778
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*414*  752   764   568  576 1138 1220   804   812   722   660   672   546   864 &
       870   632   648 1046  930  942   782
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*417*  758   768   572  580 1144 1224   808   816   730   666   676   554   862 &
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       872   634   650 1048  932  944   788
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   -1   34    1    S   *  HOLDING ROTATIONAL DOF.
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